MECHANICAL SYMBOLS LEGEND
(AS APPLICABLE)

PIPING AND SPECIALTIES

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
RD	REFRIGERANT DISCHARGE	PGR	PROPYLENE GLYCOL RETURN		INLINE PUMP
RL	REFRIGERANT LIQUID	PGS	PROPYLENE GLYCOL SUPPLY	MV	AIR VENT - MANUAL
RS	REFRIGERANT SUCTION	FOR	FUEL OIL RETURN		
CD	COIL CONDENSATE DRAIN	FOS	FUEL OIL SUPPLY	A	AIR VENT - AUTOMATIC
LPS (XX)	LOW PRESSURE STEAM (PRESSURE)	FOV	FUEL OIL VENT	FS	FLOW SWITCH
MPS (XX)	MEDIUM PRESSURE STEAM (PRESSURE)	CR	CONDENSER WATER RETURN	PS	PRESSURE SWITCH
HPS (XX)	HIGH PRESSURE STEAM (PRESSURE)	CS	CONDENSER WATER SUPPLY	AS	AIR SEPARATOR
LPC	LOW PRESSURE CONDENSATE	HPWR	HEAT PUMP WATER RETURN		
MPC	MEDIUM PRESSURE CONDENSATE	HPWS	HEAT PUMP WATER SUPPLY		THERMOMETER
HPC	HIGH PRESSURE CONDENSATE	D / R	PITCH OF PIPE, RISE (R) OR DROP (D)	TW	THERMOMETER WELL
PC	PUMPED CONDENSATE		PIPE ANCHOR - MAIN		
MU	MAKE-UP WATER		PIPE ANCHOR - INTERMEDIATE		BALL JOINT
HCR	HOT/CHILLED WATER RETURN	H	HANGER - ROD	PSO	PUMP SUCTION DIFFUSER
HCS	HOT/CHILLED WATER SUPPLY	H	HANGER - SPRING		FLOAT THERMOSTATIC TRAP
HWR	HEATING WATER RETURN		ALIGNMENT GUIDE		FLOWMETER - ORIFICE
HWS	HEATING WATER SUPPLY		FLEX CONNECTOR		FLOWMETER - VENTURI
CWR	CHILLED WATER RETURN		EXPANSION - LOOP		DUPLEX STRAINER
CWS	CHILLED WATER SUPPLY		EXPANSION - JOINT		
EGR	ETHYLENE GLYCOL RETURN				
EGS	ETHYLENE GLYCOL SUPPLY				

DUCTWORK

SUPPLY, OUTSIDE OR MIXED AIR DUCT (UP)	10/6	RECTANGLE DUCT (WIDTH/HEIGHT)	OPPOSED BLADE DAMPER
SUPPLY, OUTSIDE OR MIXED AIR DUCT (DOWN)	10Ø	ROUND DUCT (DIAMETER)	PARALLEL BLADE DAMPER
SUPPLY, OUTSIDE OR MIXED AIR DUCT (SECTION)	10/6Ø	FLAT OVAL DUCT (WIDTH/HEIGHT)	FIRE DAMPER (IN HORIZONTAL DUCT)
RETURN AIR DUCT (UP)		FLEXIBLE DUCTWORK TO EQUIPMENT	SMOKE DAMPER (IN HORIZONTAL DUCT)
RETURN AIR DUCT (DOWN)		INSULATED FLEXIBLE DUCTWORK	FIRE DAMPER (IN VERTICAL DUCT)
RETURN AIR DUCT (SECTION)	R	ELEVATION CHANGE (RISE OR DROP)	SMOKE DAMPER (IN VERTICAL DUCT)
RELIEF OR EXHAUST AIR DUCT (UP)		HIGH EFF. TAKE OFF FITTING WITH VOLUME DAMPER	FIRE/SMOKE DAMPER (IN HORIZONTAL DUCT)
RELIEF OR EXHAUST AIR DUCT (DOWN)	BD	BACKDRAFT DAMPER	FIRE/SMOKE DAMPER (IN VERTICAL DUCT)
RELIEF OR EXHAUST AIR DUCT (SECTION)		TURNING VANES	DUCT ACCESS PANEL
ROUND DUCT (UP)		VOLUME CONTROL DAMPER	RELIEF PANEL
ROUND DUCT (DOWN)		VOLUME CONTROL DAMPER	
ROUND DUCT (SECTION)		DUCT END CAP	

H.V.A.C.

SUPPLY DIFFUSER		VAV TERMINAL UNIT	THERMOSTAT
SUPPLY REGISTER		FAN POWERED VAV TERMINAL UNIT	THERMOSTAT WITH GUARD
SUPPLY SLOT DIFFUSER		SIDE WALL DIFFUSER	TEMPERATURE SENSOR - XX=X DENOTES SERVED
RETURN REGISTER		ROUND DIFFUSER	CARBON MONOXIDE SENSOR
RETURN GRILLE		EXTERIOR LOUVER	CARBON DIOXIDE SENSOR
EXHAUST REGISTER		SUPPLY IDENTIFICATION TAG X DENOTES TYPE	NITROGEN DIOXIDE SENSOR
EXHAUST GRILLE		RETURN/ EXHAUST/LOUVER IDENTIFICATION TAG X DENOTES TYPE	HUMIDITY SENSOR
DUAL DUCT TERMINAL UNIT		MOTORIZED ACTUATOR	PRESSURE SENSOR
		PNEUMATIC ACTUATOR	TEMPERATURE SENSOR WITH GUARD
			HUMIDISTAT
			EMERGENCY SHUTDOWN SWITCH

PLUMBING

DOMESTIC COLD WATER PIPING	ACW	ACID WASTE BELOW FLOOR OR GRADE	PA PROCESSED AIR
DOMESTIC HOT WATER SUPPLY	AW	EXIST ACID WASTE BELOW FLOOR/GRADE	IR IRRIGATION PIPING
DOMESTIC HOT WATER RECIRC.	AW	ACID WASTE ABOVE FLOOR OR GRADE	P TRAP PRIMER
PIPE REMOVAL	GW	GREASE WASTE BELOW FLOOR OR GRADE	G (XX) NATURAL GAS PIPING (PSIG)
SANITARY BELOW FLOOR OR GRADE	GW	EXIST GREASE WASTE BELOW FLOOR/GRADE	HB HOSE BIBB
EXISTING SANITARY BELOW FLOOR/GRADE	GW	GREASE WASTE ABOVE FLOOR OR GRADE	WH WALL HYDRANT
SANITARY ABOVE FLOOR OR GRADE	OSW	OIL/SAND BELOW FLOOR OR GRADE	CO CLEAN OUT
STORM BELOW FLOOR OR GRADE	OSW	EXISTING OIL/SAND BELOW FLOOR/GRADE	FCO FLOOR CLEAN OUT
EXISTING STORM BELOW FLOOR/GRADE	DSW	OIL/SAND ABOVE FLOOR OR GRADE	FLOOR DRAIN
STORM ABOVE FLOOR OR GRADE	SCW	SOFTENED COLD WATER PIPING	VTR VENT THRU ROOF (X DENOTES IDENTIFICATION)
STORM OVERFLOW BELOW FLOOR/GRADE	PD	PUMPED DISCHARGE	RD ROOF DRAIN
EXIST. STORM OVERFLOW BELOW FLOOR/GRADE	V	VENT PIPING	ORD OVERFLOW ROOF DRAIN
STORM OVERFLOW ABOVE FLOOR/GRADE	AV	ACID VENT PIPING	DSN DOWNSPOUT NOZZLE
	CA	COMPRESSED AIR	

VALVES

GATE VALVE	STOP/CHECK GATE VALVE (ARROW IND. FLOW)		MULTIPURPOSE VALVE
ANGLE GATE VALVE	SPRING GATE CHECK VALVE (ARROW IND. FLOW)	PRDCE	PRESSURE REDUCING VALVE
BALL VALVE	SWING GATE CHECK VALVE (ARROW IND. FLOW)	PRVCE	PRESSURE REDUCING PILOT VALVE
LOCKABLE BALL VALVE	ANGLE STOP/CHECK VALVE	BFP	REDUCED PRESS. BACKFLOW ASSY.
BUTTERFLY VALVE	2-WAY ELECTROMOTOR VALVE	DC	DOUBLE CHK VALVE BACKFLOW ASSY.
GLOBE VALVE	2-WAY AIRMOTOR VALVE	DDC	DOUBLE DETECTOR CHECK VALVE
ANGLE GLOBE VALVE	2-WAY MANUAL VALVE		OUTSIDE STEM & YOKE VALVE
PLUG VALVE	3-WAY ELECTROMOTOR VALVE		QUICK CLOSING FUSIBLE LINK VALVE
DIAPHRAGM VALVE	3-WAY AIRMOTOR VALVE		QUICK OPENING VALVE
DIAPHRAGM ACTUATED VALVE	3-WAY MANUAL VALVE		PRESSURE GAUGE & BALL VALVE
VALVE IN VERTICAL LINE	SAFETY PRESSURE RELIEF VALVE		GATE VALVE WITH GLOBE VALVE BY-PASS
HOSE GATE VALVE	PRESSURE RELIEF VALVE		GLOBE VALVE WITH GLOBE VALVE BY-PASS
HOSE GLOBE VALVE	TEMPERATURE MIXING VALVE		
HOSE ANGLE VALVE	AUTO FLOW VALVE		SPRINKLER - CONCEALED
SOLENOID VALVE	FLOAT VALVE		SPRINKLER - RECESSED
POST INDICATOR VALVE	LOCK SHIELD		SPRINKLER - SIDEWALL
	CIRCUIT SETTER		SPRINKLER - UPRIGHT
			SPRINKLER - ZONE CONTROL

FITTINGS

ELBOW	ELBOW - DOUBLE BRANCH		REDUCER - CONCENTRIC
LONG RADIUS ELBOW	ELBOW - SIDE OUTLET UP		REDUCER - ECCENTRIC STRAIGHT INVERT
SHORT RADIUS ELBOW	ELBOW - SIDE OUTLET DOWN		REDUCER - ECCENTRIC STRAIGHT CROWN
45° ELBOW	ELBOW - OUTLET DOWN		CAPPED CONNECTION
TEE	ELBOW - OUTLET UP		THREADED CONNECTION
CROSS	TEE - OUTLET DOWN		FLANGED CONNECTION
LATERAL	TEE - OUTLET UP		STRAINER
TEE - SINGLE SWEEP	TEE - SIDE OUTLET DOWN		STRAINER WITH BALL VALVE DRAIN
	TEE - SIDE OUTLET UP		STRAINER WITH COUPLER
	SIAMESE CONNECTION		BUSHING
			FLOW DIRECTION

MISCELLANEOUS

EQUIPMENT IDENTIFICATION TAG (ELECTRICAL CONNECTION REQUIRED)	NEW CONNECTION POINT	WC	WATER CLOSET
DETAIL REFERENCE / SHEET REFERENCE	POINT OF DISCONNECT	UR	URINAL
	OUTSIDE AIR	L	LAVATORY
SECTION CUT REFERENCE / SHEET REFERENCE	VENTILATION AIR	S	SINK
ELECTRICAL PANEL - SHOWN FOR COORDINATION PURPOSES ONLY	EXHAUST AIR	DF	DRINKING FOUNTAIN
ELECTRICAL PANEL - SHOWN FOR COORDINATION PURPOSES ONLY	RELIEF OR RETURN AIR	EWC	ELECTRIC WATER COOLER
ELECTRICAL PANEL - SHOWN FOR COORDINATION PURPOSES ONLY	SUPPLY AIR	SS	SERVICE SINK
ELECTRICAL TRANSFORMER - SHOWN FOR COORDINATION PURPOSES ONLY	MIXED AIR	SH	SHOWER
	RELIEF OR RETURN FAN	DWH	DOMESTIC WATER HEATER
	EXHAUST FAN	MSB	MOP SINK BASIN
	TYPICAL		LIGHT LINEWORK = EXISTING OR DEMOLITION
			DARK LINEWORK = NEW

GENERAL MECHANICAL DEMOLITION NOTES

A. CROSSHATCHING INDICATES EXISTING ITEMS AND ASSOCIATED MATERIALS SHALL BE REMOVED.

B. DRAWINGS INDICATE APPROXIMATE ROUTING OF PIPING, DUCTWORK AND MAJOR COMPONENTS AND DO NOT INCLUDE ALL OFFSETS, FITTINGS, VALVES, ETC. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND ROUTING PRIOR TO REMOVAL OR RELOCATION. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF MISCELLANEOUS MECHANICAL ITEMS LOCATED ON OR IN ANY WALLS TO BE REMOVED.

C. EXISTING INSULATION DAMAGED DURING DEMOLITION / CONSTRUCTION ACTIVITIES SHALL BE REPAIRED WITH SIMILAR MATERIALS.

D. ALL OPENINGS THROUGH WALLS AND FLOOR SLABS NOT BEING REUSED SHALL BE PATCHED WITH LIKE MATERIALS AND FINISHED AND PAINTED TO MATCH EXISTING.

E. CONTRACTOR SHALL REMOVE ALL MATERIALS AS REQUIRED AND SHALL GIVE THE OWNER THE OPPORTUNITY TO INSPECT SUCH MATERIALS FOR POTENTIAL SALVAGE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL MATERIALS DEEMED "NON-SALVAGEABLE" BY THE OWNER. CONTRACTOR SHALL TURN OVER TO OWNER ALL MATERIALS DEEMED "SALVAGEABLE" BY THE OWNER.

GENERAL PLUMBING NOTES

A. LIGHT LINE WEIGHT INDICATES EXISTING ITEMS AND ASSOCIATED MATERIALS TO REMAIN. BOLD LINE WEIGHT INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.

B. ROUTING INDICATED ON DRAWINGS IS APPROXIMATE AND DOES NOT INCLUDE ALL OFFSETS, FITTINGS, VALVES, ETC. CONTRACTOR TO FIELD VERIFY PIPE SIZE AND SERVICE PRIOR TO FINAL CONNECTION. COORDINATE LOCATION OF PLUMBING PIPING WORK WITH LIGHTING, STRUCTURAL MEMBERS, HVAC, PIPING SYSTEMS, ETC. PROVIDE OFFSETS AND CLEARANCES OR RELOCATE PLUMBING WORK AS REQUIRED TO AVOID CONFLICTS WITH WORK OF ALL OTHER TRADES.

C. SUPPORT ALL PLUMBING PIPING, EQUIPMENT, ETC. FROM BUILDING STRUCTURE. HOLD PIPING TIGHT TO BOTTOM OF STRUCTURAL MEMBERS OR RUN THROUGH JOIST WEBS IF POSSIBLE. DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING. DO NOT SUPPORT PIPING FROM OTHER PIPING, DUCTWORK AND/OR ELECTRICAL CONDUITS. DO NOT SUPPORT FROM BOTTOM OF CHORD OF BAR JOIST OR FROM METAL ROOF DECK.

D. ROUTE ABOVE GRADE DRAINAGE PIPING AS HIGH AS POSSIBLE AND COORDINATE WITH OTHER TRADES.

E. INSTALL ESCUTCHEON PLATES ON ALL WALL AND FLOOR PENETRATIONS SERVING EXPOSED PLUMBING PIPING WALL PENETRATIONS.

F. ALL OPENINGS IN WALLS AND FLOORS FOR PIPING SHALL BE CORE DRILLED OR SAW CUT, UNLESS OTHERWISE NOTED.

G. SEAL ALL PLUMBING PIPING PENETRATIONS. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS OR CEILINGS WITH MATERIALS APPROPRIATE FOR RATING.

H. COORDINATE EXACT STORM PIPE CONNECTIONS WITH STORM DRAIN LOCATIONS SHOWN ON ARCHITECTURAL ROOF PLAN.

I. REMOVE, REPAIR AND REPLACE WALLS, FLOORS, ROOFS AND CEILINGS TO MATCH EXISTING, WHERE NECESSARY FOR PIPING AND FIXTURE REMOVAL & INSTALLATION.

J. PLUMBING CONTRACTOR SHALL INSTALL ROOF DRAINAGE PIPING AS HIGH AS POSSIBLE IN THE JOIST SPACES TO AVOID ANY DUCTWORK LOCATED BELOW BAR JOISTS. COORDINATE ROUTING WITH SHEET METAL CONTRACTOR BEFORE INSTALLATION.

GENERAL MECHANICAL NOTES

A. LIGHT LINE WEIGHT INDICATES EXISTING ITEMS AND ASSOCIATED MATERIALS TO REMAIN. BOLD LINE WEIGHT INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.

B. ROUTING INDICATED ON DRAWINGS IS APPROXIMATE AND DOES NOT INCLUDE ALL OFFSETS, FITTINGS, VALVES, ETC. CONTRACTOR TO FIELD VERIFY DUCT SIZE AND SERVICE PRIOR TO FINAL CONNECTION. COORDINATE LOCATION OF HVAC WORK WITH LIGHTING, STRUCTURAL MEMBERS, PIPING SYSTEMS, ETC. PROVIDE OFFSETS AND CLEARANCES OR RELOCATE HVAC WORK AS REQUIRED TO AVOID CONFLICTS WITH WORK OF ALL OTHER TRADES.

C. HVAC WORK SHALL NOT BE LOCATED OVER ELECTRICAL, DATA, OR COMMUNICATION EQUIPMENT ROOMS. HVAC WORK SHALL NOT BE LOCATED ABOVE ELECTRICAL / DATA / COMMUNICATION EQUIPMENT OR PANELS.

D. SUPPORT ALL DUCTWORK, PIPING, EQUIPMENT, ETC. FROM BUILDING STRUCTURE. HOLD PIPING TIGHT TO BOTTOM OF STRUCTURAL MEMBERS OR RUN THROUGH JOIST WEBS IF POSSIBLE. DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING. DO NOT SUPPORT PIPING FROM OTHER PIPING, DUCTWORK AND/OR ELECTRICAL CONDUITS. DO NOT SUPPORT FROM BOTTOM OF CHORD OF BAR JOIST OR FROM METAL ROOF DECK.

E. PROVIDE DRAW BANDS AND SEAL END OF DUCT INSULATION ON ALL FLEXIBLE CONNECTIONS. MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE THREE FEET.

F. COORDINATE ALL GRILLE, REGISTER AND DIFFUSER LOCATIONS WITH REFLECTED CEILING PLAN, LIGHT FIXTURES, SPRINKLERS, COMMUNICATION/SOUND DEVICES AND FIRE ALARM DEVICES.

G. INSTALL WALL ANGLE FOR ALL RECTANGULAR DUCT PENETRATIONS THROUGH WALLS.

H. VOLUME DAMPERS ABOVE INACCESSIBLE CEILINGS SHALL HAVE EXTENSION RODS AND ESCUTCHEON PLATES.

I. LOCATE AND INSTALL EQUIPMENT TO PROVIDE ALL CODE AND MANUFACTURER'S RECOMMENDED CLEARANCES. KEEP HVAC PIPING, DUCTWORK, ETC. OUT OF CLEARANCE AREAS.

J. ALL OPENINGS IN WALLS AND FLOORS FOR PIPING SHALL BE CORE DRILLED OR SAW CUT, UNLESS OTHERWISE NOTED.

K. ALL HVAC PIPING WORK SHALL BE LOCATED ABOVE CEILINGS, IN A PIPE CHASE, OR OTHER CONCEALED LOCATIONS, UNLESS OTHERWISE NOTED. LOCATE AND ARRANGE VALVES, DRAIN FITTINGS, ETC. TO BE ACCESSIBLE THROUGH LAY-IN CEILINGS, ACCESS PANELS OR ACCESS DOORS. PROVIDE ACCESS PANEL OR ACCESS DOOR FOR ALL VALVES, DRAIN FITTINGS, ETC. AT NON-ACCESSIBLE LOCATIONS.

L. SLOPE HVAC PIPING TO DRAIN VALVES. PROVIDE MANUAL AIR VENTS AT HIGH POINTS AND AT TOP OF RISERS.

M. ALL MECHANICAL WORK IN CEILING SPACE THAT IS NOT CONFINED BY TEMPORARY CONSTRUCTION WALLS SHALL REQUIRE THE USE OF DUST CARTS.

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot
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Revisions:	Date

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ENGINEERING CONSULTING GROUP

Drawing Title: MECHANICAL SYMBOLS LEGEND AND GENERAL NOTES

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC
Location: VAMC Omaha Nebraska
Date: MAY 10, 2013 | Checked: MKL | Drawn: LMB

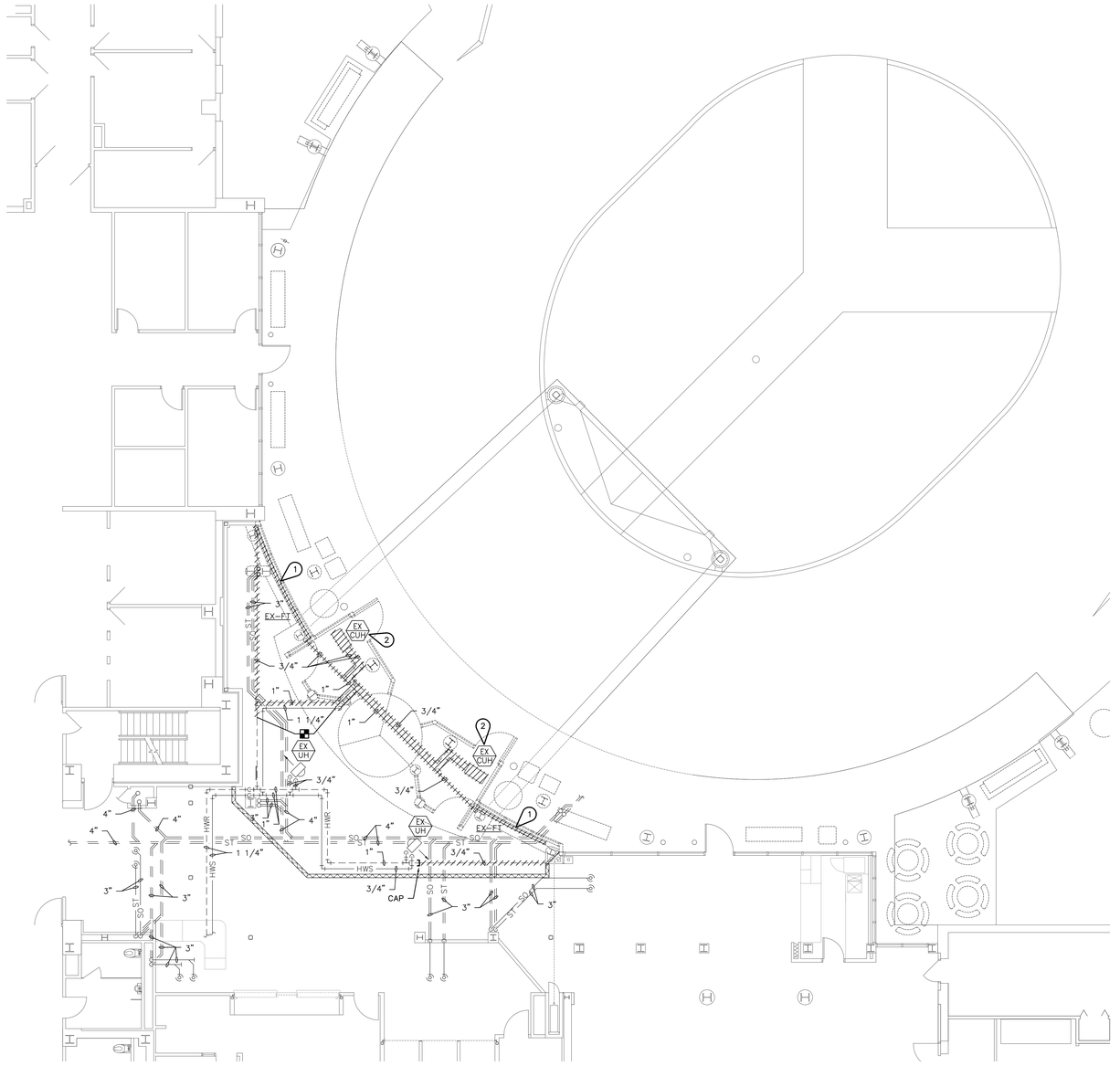
Project Number: 636-13-122
Building Number: ONE
Drawing Number: M0.1
Dwg. 25 of 36

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

MECHANICAL KEYNOTES: (◇)

1. REMOVE EXISTING FINTUBE AND ALL ASSOCIATED PIPING AND CONTROLS.
2. REMOVE EXISTING CABINET UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS. EQUIPMENT SHALL BE TURNED OVER TO THE OWNER. CONTRACTOR SHALL STORE UNITS AT A LOCATION DESIGNATED BY THE OWNER.



1 M1.1 MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

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Drawing Title: MECHANICAL DEMOLITION PLAN

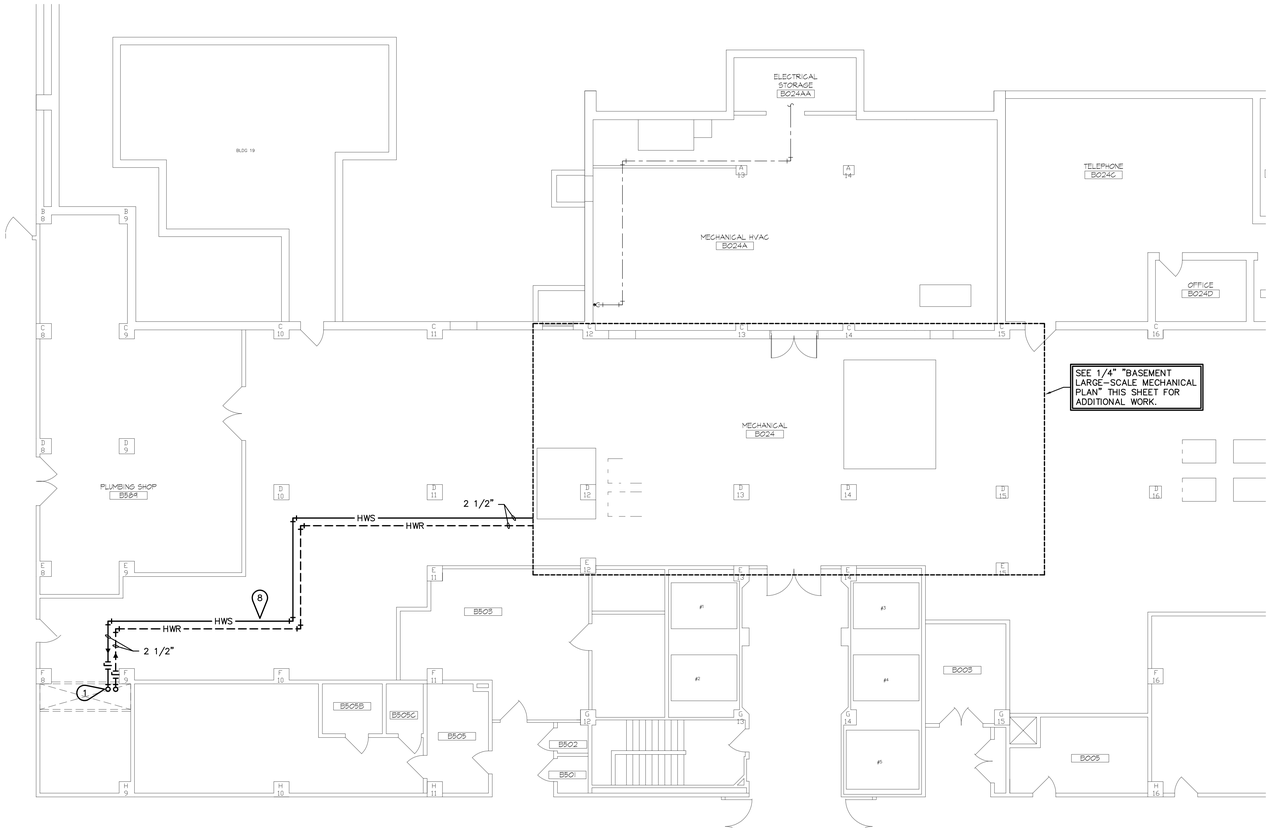
CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC
Location: VAMC Omaha Nebraska
Date: MAY 10, 2013 | Checked: MKL | Drawn: LMB

Project Number: 636-13-122
Building Number: ONE
Drawing Number: M1.1
Dwg. 26 of 36

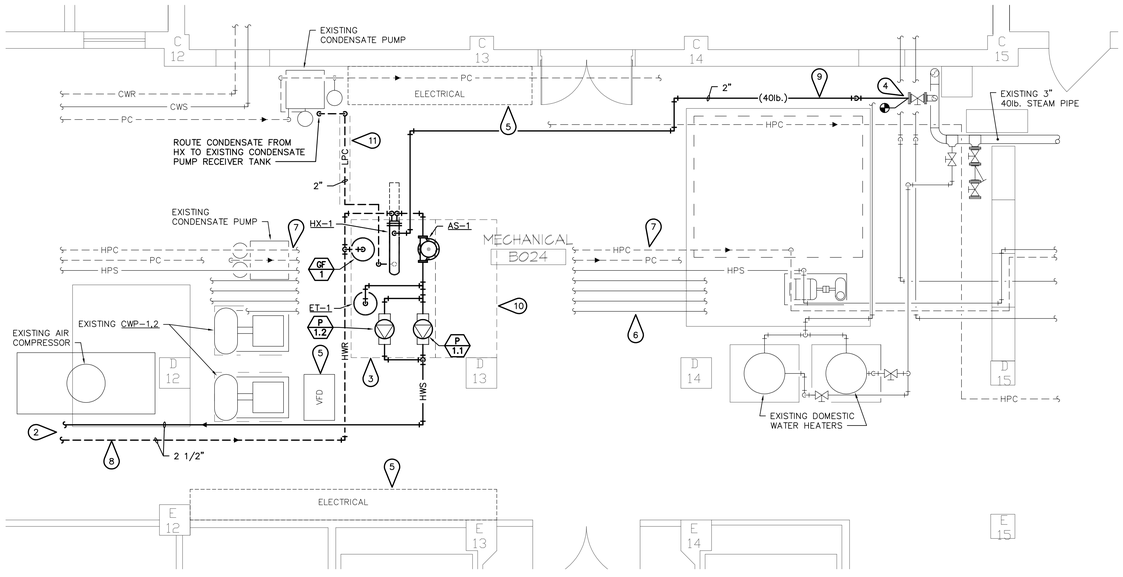
Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



1 M2.1 BASEMENT MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



2 M2.1 BASEMENT LARGE-SCALE MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

MECHANICAL KEYNOTES: (◇)

1. HWS/HWR UP TO SECOND FLOOR. REFER TO SHEET M2.3 FOR CONTINUATION OF PIPING.
2. REFER TO BASEMENT MECHANICAL PLAN, THIS SHEET, FOR CONTINUATION OF PIPING.
3. PUMPS P1.1, P1.2, HX-1, AS-1, ET-1, GF-1 AND ALL ASSOCIATED CONNECTED PIPING, VALVES, ETC. SHALL BE FACTORY ASSEMBLED ON A PRE-PACKAGED STEEL SKID. MAXIMUM SKID SIZE SHALL BE 4'-0" X 9'-0" X 5'-6" (HIGH). INSTALL SKID ON 4" THICK CONCRETE EQUIPMENT PAD. REFER TO **DETAIL 1/M3.1**.
4. CONNECT NEW 2" 40lb. STEAM SUPPLY PIPE TO EXISTING VALVED AND CAPPED PIPE BRANCH.
5. MAINTAIN REQUIRED CLEARANCES IN FRONT OF ALL ELECTRICAL EQUIPMENT.
6. EXISTING OVERHEAD ELECTRICAL CONDUITS AT +6'-10" A.F.F.
7. EXISTING OVERHEAD STEAM AND CONDENSATE PIPING AT +6'-2" A.F.F.
8. MAINTAIN CLEARANCE OF +6'-2" A.F.F. (MIN.) ON ALL NEW PIPING INSTALLATIONS ABOVE WALKWAY AREAS IN THIS ROOM.
9. CONTRACTOR SHALL COORDINATE BEST ROUTING OF NEW PIPING IN THIS AREA WITH EXISTING CONDITIONS.
10. SPACE RESERVED FOR "UPGRADE FORCE PROTECTION" PROJECT MECHANICAL EQUIPMENT.
11. INSTALL LPC PIPING ACROSS WALKWAY AREA IN PIPE TRENCH. SEE **DETAIL 4/M3.1**. COORDINATE WITH LPC PIPE FROM "UPGRADE FORCE PROTECTION" PROJECT.

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one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot
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Drawing Title: BASEMENT MECHANICAL PLANS

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC

Location: VAMC Omaha Nebraska

Date: MAY 10, 2013 | Checked: MKL | Drawn: LMB

Project Number: 636-13-122

Building Number: ONE

Drawing Number: M2.1

Dwg. 27 of 36

Office of Construction and Facilities Management

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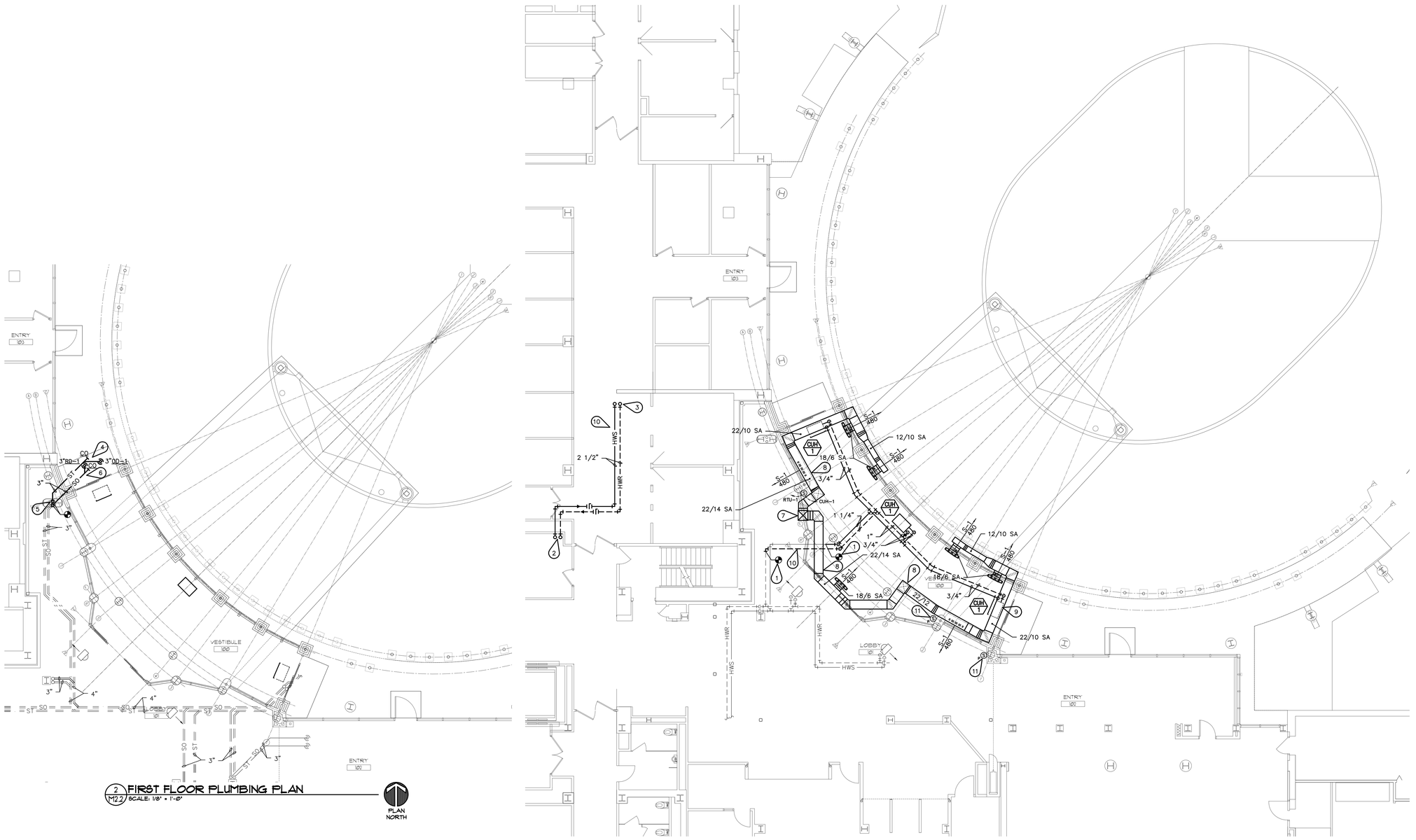
VA FORM 08-6231



2 M2.2 FIRST FLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

1 M2.2 FIRST FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

MECHANICAL KEYNOTES: (◇)

1. CONNECT NEW 1 1/4" HWS/HWR TO EXISTING 1 1/4" HWS/HWR.
2. HWS/HWR UP TO SECOND FLOOR. REFER TO SHEET M2.3 FOR CONTINUATION OF PIPING.
3. HWS/HWR UP TO RTU-1. SEE SHEET M2.3.
4. INSTALL STAINLESS STEEL ACCESS PANEL IN BOTTOM OF SIDEWALK CANOPY IN THIS LOCATION TO ALLOW FOR PROPER ACCESS TO STORM PIPING CLEANOUTS. LOCATE ACCESS PANEL OUTSIDE OF VAULTED AREA OF CANOPY.
5. CONNECT NEW 3" STORM AND 3" STORM OVERFLOW PIPING TO EXISTING 3" STORM AND 3" STORM OVERFLOW AND ROUTE DOWN IN COLUMN CHASE TO BELOW GRADE.
6. COORDINATE EXACT STORM AND STORM OVERFLOW PIPING WITH ALL OTHER DISCIPLINES IN THIS AREA TO ALLOW FOR PROPER SLOPE IN CEILING SPACE. ROUTE AS HIGH AS POSSIBLE IN CEILING SPACE. ALL STORM PIPING INSTALLED ABOVE UNCONDITIONED SPACE SHALL BE HEAT TRACED WITH 3W/LF THERMON SELF-REGULATING ELECTRIC HEAT TRACING TAPE. FURNISH WITH SET POINT TEMPERATURE REGULATOR. INSULATE PIPING WITH 1-1/2" FIBERGLASS PIPE INSULATION WITH CEEL-CO 300 PVC JACKETING. COORDINATE WITH ELECTRICAL.
7. 22/22 SA UP. SEE SHEET M2.3 FOR CONTINUATION.
8. ALL DUCTWORK IN VESTIBULE 100 SHALL BE ROUTED IN CEILING SOFFITS. SEE ARCHITECTURAL AND STRUCTURAL CEILING PLANS AND SECTIONS FOR COORDINATION.
9. CUH, INSTALL IN CEILING SOFFIT AND BELOW DUCTWORK. REFER TO **DETAIL 2/M3.1** (TYPICAL).
10. REMOVE AND REPLACE EXISTING CEILING TILES ALONG NEW PIPE ROUTING AS REQUIRED FOR INSTALLATION OF PIPING.
11. CONTROLS CONTRACTOR SHALL VERIFY BEST LOCATION OF PRESSURE SENSORS IN VESTIBULE 100 AND LOBBY 101.

GENERAL FIRE PROTECTION NOTES:

1. EXISTING FIRE PROTECTION SPRINKLER SYSTEM SHALL BE EXTENDED INTO NEW VESTIBULE 100 TO PROVIDE LIGHT HAZARD FIRE PROTECTION TO THIS AREA.
2. NEW SPRINKLERS SHALL BE DRY-TYPE PENDENT, SEMI-RECESSED SPRINKLERS.
3. COORDINATE CEILINGS IN VESTIBULE 100 WITH ARCHITECTURAL PLANS.
4. REMOVE AND REPLACE EXISTING CEILING TILES IN EXISTING LOBBY AND OTHER AREAS AS REQUIRED TO EXTEND NEW SPRINKLER PIPING FROM EXISTING SYSTEM.

TEMPERATURE CONTROL – SEQUENCE OF OPERATION:

1. GENERAL: EXISTING CONTROL SYSTEM IS AN ANDOVER SYSTEM MAINTAINED BY CSI OF OMAHA. ALL NEW EQUIPMENT SHALL INTERFACE WITH THE EXISTING BMS PER THE FOLLOWING SEQUENCES.
2. RTU-1; ROOFTOP UNIT IS A 100% OUTSIDE AIR SYSTEM. ROOFTOP UNIT INTERNAL CONTROLS SHALL OPERATE UNIT. BMS SHALL CONTROL ON/OFF AND SHALL MONITOR STATUS AND ALARMS. UNIT SUPPLY FAN, COOLING AND HEATING SHALL OPERATE CONTINUOUSLY DURING OCCUPIED OPERATION TO MAINTAIN A POSITIVE DIFFERENTIAL PRESSURE BETWEEN THE NEW VESTIBULE AND THE EXISTING ENTRY LOBBY AND THE OUTDOORS. UNIT SUPPLY FAN, COOLING AND HEATING SHALL MODULATE DURING UNOCCUPIED OPERATION TO MAINTAIN A POSITIVE DIFFERENTIAL PRESSURE BETWEEN THE NEW VESTIBULE AND THE EXISTING ENTRY LOBBY AND THE OUTDOORS. SAME ROOM TEMPERATURE SENSOR THAT CONTROLS CUH-1 SHALL PROVIDE SPACE TEMPERATURE INPUT TO RTU-1 CONTROLS FOR SUPPLY AIR TEMPERATURE RESET.
3. PUMPS P-1.1, P-1.2 AND HX-1; PUMPS SHALL OPERATE AS LEAD/STANDBY PUMPING SYSTEM ON A CALL FOR HEATING FROM ROOFTOP UNIT RTU-1. HX-1 STEAM CONTROL VALVE SHALL MODULATE TO MAINTAIN THE REQUIRED HEATING WATER SUPPLY TEMPERATURE. BMS SHALL CONTROL PUMP ON/OFF, MONITOR STATUS AND CONTROL STEAM VALVE.
4. CUH-1; ROOM TEMPERATURE SENSOR SHALL CONTROL UNITS THROUGH THE BMS TO MAINTAIN HEATING SETPOINT IN NEW VESTIBULE.
5. GLYCOL FEEDER GF-1; BMS SHALL MONITOR STATUS AND LOW LEVEL ALARM.
6. SEE POINTS LIST ON M2.3.

Revisions:	Date

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Drawing Title: FIRST FLOOR MECHANICAL AND PLUMBING PLANS

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC
Location: VAMC Omaha Nebraska
Date: MAY 10, 2013 | Checked: MKL | Drawn: LMB

Project Number: 636-13-122
Building Number: ONE
Drawing Number: M2.2
Dwg. 28 of 36

Office of Construction and Facilities Management
Department of Veterans Affairs

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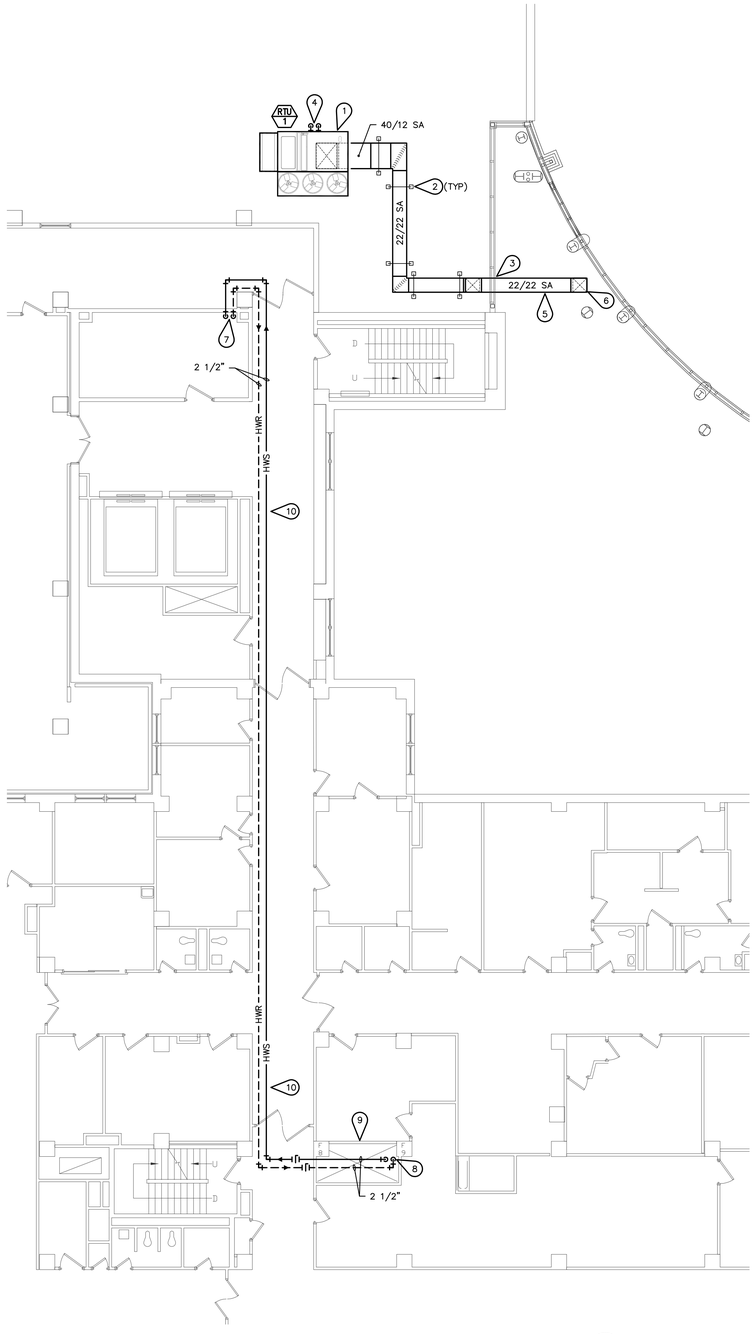
VA FORM 08-6231

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



1 M2.3 SECOND FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

MECHANICAL KEYNOTES: (◇)

1. INSTALL RTU ON FIRST FLOOR ROOF WITH 30-INCH HIGH INSULATED ROOF CURB WITH SUPPLY DUCT PENETRATION THROUGH SIDE OF CURB.
2. PROVIDE GALVANIZED STEEL ANGLE DUCT SUPPORTS FROM ROOF AT 10'-0" INCREMENTS AND AT ELBOWS FOR DUCTWORK INSTALLED ON FIRST FLOOR ROOF.
3. REFER TO ARCHITECTURAL DETAILS AND SECTIONS FOR DUCT PENETRATION THROUGH EXISTING WALL. DUCT PENETRATION THROUGH WALL SHALL BE SEALED WATER-TIGHT.
4. HWS/HWR PIPING UP TO RTU HEATING COIL. REFER TO **DETAIL 3/M3.1**. PIPING SHALL PENETRATE ROOF INSIDE OF ROOF CURB.
5. INSTALL DUCTWORK WITHIN NEW CEILING BULKHEAD, SEE ARCHITECTURAL PLANS AND SECTIONS.
6. 22/22 SA DOWN. SEE SHEET M2.2 FOR CONTINUATION.
7. 2 1/2" HWS/HWR PIPING DOWN TO FIRST FLOOR. SEE SHEET M2.2 FOR CONTINUATION. COORDINATE EXACT LOCATION AND NEW PIPE CHASE ENCLOSURE WITH ARCHITECT.
8. 2 1/2" HWS/HWR PIPING DOWN TO BASEMENT. SEE SHEET M2.1 FOR CONTINUATION.
9. WORK IN THIS CHASE SHALL BE CONSIDERED "CONFINED SPACE" WORK AND SHALL BE ACCOMMODATED AS SUCH BY CONTRACTOR.
10. REMOVE AND REPLACE EXISTING CEILING TILES ALONG NEW PIPE ROUTING AS REQUIRED FOR INSTALLATION OF PIPING. CONTRACTOR SHALL DETERMINE BEST ROUTING OF NEW PIPING THROUGH THIS AREA.

SYSTEM/POINT DESCRIPTION	DEVICE TYPE	GRAPHIC DISPLAY	POINT TYPE	ALARM	TREND
ROOFTOP UNIT RTU-1					
Occupancy Status	Software Point (i.e. setpoint)	Y	SW		
Fan Start/Stop	Relay - Equipment Start/Stop	Y	BO		X
Fan Status	Relay - Equipment Status (Current)	Y	BI	X	X
Fan Speed	Misc. - Analog Output	Y	AO		X
Zone Temperature (reference CUH-1 sensor)	Sensor - Temperature (Space)	Y	AI		X
Zone Temperature Setpoint	Software Point (i.e. setpoint)	Y	SW		
Space Pressure	Sensor - Pressure (Air)	Y	AI	X	X
Space Pressure Setpoint	Software Point (i.e. setpoint)	Y	SW		
Heating Coil Control Valve	Actuator - Control Valve	Y	AO		X
Dx Cooling Stage	Relay - Equipment Start/Stop	Y	BO		X
Supply Air Temperature	Sensor - Temperature (Duct)	Y	AI		X
Supply Air Temperature Setpoint	Software Point (i.e. setpoint)	Y	SW		
Outside Air Damper	Actuator - Damper	Y	AO		X
Outside Air Temperature (existing)	Sensor - Temperature (OA)	Y	AI		X
HOT WATER SYSTEM					
Occupancy Status	Software Point (i.e. setpoint)	Y	SW		
Hot Water Pump Start/Stop	Relay - Equipment Start/Stop	Y	BO		X
Hot Water Pump Status	Relay - Equipment Status (Current)	Y	BI	X	X
Hot Water Supply Temperature	Sensor - Temperature (Hydronic)	Y	AI		X
Hot Water Supply Temperature Setpoint	Software Point (i.e. setpoint)	Y	BI	X	
Hot Water Return Temperature	Sensor - Temperature (Hydronic)	Y	AI		X
Glycol Level	Switch - Level (Hydronic)	Y	BI	X	X
Steam Control Valve	Actuator - Control Valve	Y	AO		X
Outside Air Temperature (existing)	Sensor - Temperature (OA)	Y	AI		X
CABINET UNIT HEATERS					
Occupancy Status	Software Point (i.e. setpoint)	Y	SW		
Fan Start/Stop	Relay - Equipment Start/Stop	Y	BO		X
Fan Status	Relay - Equipment Status (Current)	Y	BI	X	X
Zone Temperature	Sensor - Temperature (Space)	Y	AI		X
Zone Temperature Setpoint	Software Point (i.e. setpoint)	Y	SW		

NOTES:
1. BI=BINARY INPUT, BO=BINARY OUTPUT, AI=ANALOG INPUT
   AO=ANALOG OUTPUT, SW=SOFTWARE POINT

Revisions: | Date

VA FORM 08-6231

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Dwg. 29 of 36

Office of Construction and Facilities Management

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MECHANICAL / ELECTRICAL COORDINATION SCHEDULE

ABBREVIATION:

E	ELECTRICAL CONTRACTOR	HP	HORSEPOWER	4X	NEMA 4X	V	VOLTAGE
M	MECHANICAL CONTRACTOR	KW	KILOWATTS	PH	PHASE	VFD	VARIABLE FREQUENCY
I	INTEGRAL WITH EQUIPMENT	MR	PER MANUFACTURER'S	RE	REVERSING		DRIVE
C	COMBINATION STARTER AND		RECOMMENDATION	RV	REDUCED VOLTAGE	2S	TWO SPEED
	SAFETY SWITCH	NF	NON-FUSED	SF	FUSE HOLDER WITH SWITCH	3S	THREE SPEED
CB	CIRCUIT BREAKER	NR	NON-REVERSING	SS	SAFETY SWITCH		
FV	FULL VOLTAGE	N1	NEMA 1	SH	HP RATED SWITCH		
FLA	FULL LOAD AMPS	3R	NEMA 3R	ST	THERMAL ELEM. SWITCH		

REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

MARK	DESCRIPTION	RATING			DISCONNECT					MOTOR STARTER			NAMEPLATE	REMARKS
		LOAD	V	PH	FURNISH/ INSTALL BY	TYPE	RATING (AMPS)	FUSE SIZE	ENCL.	FURNISH/ INSTALL BY	TYPE/ NEMA SIZE	ENCL.	MINIMUM SCCR (AMPS)	
RTU-1	ROOFTOP UNIT	42 FLA	480	3	M/M	I	-	-	-	M/M	-	-		1
CUH-1	CABINET UNIT HEATER	1/4 HP	120	1	E/E	SH	20	MR	N1	M/M	-	-		
P-1,1	HEATING WATER PUMP	2 HP	208	3	E/E	C	30	MR	N1	E/E	FVNR #0	N1	-	
P-1,2	HEATING WATER PUMP	2 HP	208	3	E/E	C	30	MR	N1	E/E	FVNR #0	N1		
GF-1	HEATING WATER GLYCOL FEEDER	1/3 HP	120	1	E/E	SH	20	MR	N1	M/M	-	N1		

GENERAL NOTES:

A. VERIFY/COORDINATE ALL RATINGS FOR EQUIPMENT. WHERE SUCH RATINGS ARE OTHER THAN THAT INDICATED ON MECHANICAL/ELECTRICAL COORDINATION SCHEDULE, PROVIDE DISCONNECTS, MOTOR STARTERS, OVERCURRENT DEVICES AND RELATED REVISIONS ACCORDINGLY. WHERE EQUIPMENT IS PROVIDED WITH RATINGS OTHER THAN THAT INDICATED, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND ASSOCIATED COSTS FOR REVISIONS.

B. PROVIDE FRACTIONAL HORSEPOWER MOTORS WITH INTEGRAL OVERLOAD PROTECTION.

C. EQUIPMENT LISTED IN SCHEDULE MAY APPEAR IN NUMEROUS LOCATIONS. EQUIPMENT MARKS ARE DESIGNATED BY UNIQUE IDENTIFIERS ON THE PLANS; I.E., HP-1.1, HP-1.2. IN THESE INSTANCES, THE ELECTRICAL REQUIREMENTS DO NOT CHANGE FROM ONE MARK TO THE NEXT, ONLY THE UNIQUE IDENTIFIER CHANGES.

D. HORSEPOWER RATED SWITCHES (SH): FOR 120 V MOTORS LESS THAN 1/2 HP, PROVIDE FUSEHOLDER WITH SWITCH, FUSED PER MANUFACTURER'S RECOMMENDATION AND NEC REQUIREMENTS. FOR 120 V MOTORS RATED 1/2 HP OR 3/4 HP, PROVIDE HP RATED TOGGLE SWITCH (WHERE BRANCH CIRCUIT OVERCURRENT DEVICE MEETS NEC REQUIREMENTS FOR SHORT-CIRCUIT PROTECTION) OR FUSED SAFETY SWITCH.

E. INDUSTRIAL CONTROL PANELS AS DEFINED BY NEC ARTICLE 409, MOTOR CONTROLLERS, HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT SHALL BE MARKED WITH INFORMATION AS REQUIRED BY THE NATIONAL ELECTRICAL CODE (NEC). MARK IN ACCORDANCE WITH NEC ARTICLE 409.110 FOR INDUSTRIAL CONTROL PANELS, NEC ARTICLE 430.8 FOR CONTROLLERS AND NEC ARTICLE 440.4(B) FOR HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT. THE MARKED SHORT CIRCUIT CURRENT RATING (SCCR) SHALL BE NO LESS THAN THE VALUE INDICATED ABOVE.

REMARKS:

1. PROVIDE INTEGRAL DISCONNECT.

CABINET AND UNIT HEATER SCHEDULE (HOT WATER)

MARK	TYPE	ARRANGEMENT	CFM	HEATING CAP. MBH	GPM	P.D. FT.	EXT. S.P.	FAN RPM	MANUFACTURER & MODEL NO.	REMARKS
CUH-1	CEILING RECESSED	HORIZONTAL	500	32.0	2.1	1.00	0.00"	---	IEC MODEL CPY06	1, 2

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. PROVIDE CEILING RECESSED UNIT WITH BOTTOM SUPPLY AND RETURN GRILLES.

PACKAGED ROOFTOP UNIT SCHEDULE

MARK	SERVES	TOTAL CFM	OA CFM	EXT. SP (IN. WC)	DX COOLING CAP. (MBH)		HEATING COIL			MANUFACTURER & MODEL NO.	REMARKS
					TOTAL	SENSIBLE	CAP. (MBH)	GPM	PRESS. DROP (FT. WC)		
RTU-1	MAIN ENTRANCE	3400	3400	1.5	227	141	356	66	13	AAON RN-20	1 THRU 11

REMARKS:

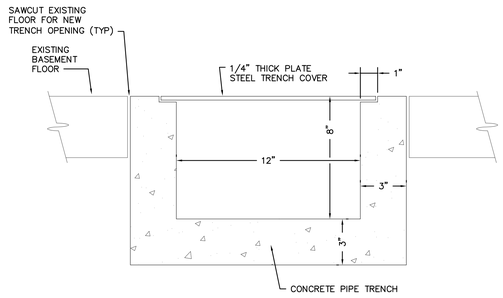
1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. COOLING CAPACITY BASED ON 95/75 DEGREES DB/WB EAT. HEATING CAPACITY BASED ON -10 DEGREES EAT.
3. UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED, TESTED, AND PROVIDED WITH SINGLE POINT POWER SUPPLY.
4. PROVIDE 2-INCH INSULATED DOUBLE-WALL CONSTRUCTION WITH R-13 INSULATION, SOLID SHEET METAL INNER LINER AND STAINLESS STEEL CONDENSATE DRAIN PAN.
5. PROVIDE DIRECT DRIVE CENTRIFUGAL PLENUM SUPPLY FAN WITH INTEGRAL VFD.
6. UNIT SHALL PROVIDE 100% OUTSIDE AIR WITH 2-POSITION, LOW LEAK AIRFOIL BLADE OUTSIDE AIR DAMPERS.
7. UNIT SHALL PROVIDE PACKAGED DX COOLING WITH DIGITAL VARIABLE CAPACITY COMPRESSOR ON FIRST CIRCUIT, ON-OFF SCROLL COMPRESSOR WITH HOT GAS BYPASS ON SECOND CIRCUIT AND MODULATING HOT GAS REHEAT.
8. PROVIDE UNIT WITH HOT WATER HEATING COIL.
9. PROVIDE 2-INCH PLEATED MERV 8 FILTERS.
10. PROVIDE FACTORY FURNISHED INSULATED SOLID BOTTOM 30-INCH HIGH PLENUM CURB.
11. PROVIDE PROGRAMMABLE MAKE-UP AIR CONTROLS WITH SUPPLY TEMPERATURE RESET BASED ON SPACE DEMAND.

PUMP SCHEDULE

MARK	SERVES	TYPE	GPM	HEAD FT.	RPM	MANUFACTURER & MODEL NO.	REMARKS
P-1,1	RTU HEATING	VERTICAL INLINE	70	35	1,750	PATTERSON MODEL V2C7A-CC	1, 2, 3, 4
P-1,2	RTU HEATING	VERTICAL INLINE	70	35	1,750	PATTERSON MODEL V2C7A-CC	1, 2, 3, 4

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. PROVIDE WITH PREMIUM EFFICIENCY INVERTER-DUTY MOTOR.
3. PUMP SHALL BE MOUNTED ON FACTORY ASSEMBLED AND PACKAGED SKID BY TIGERFLOW OR APPROVED EQUAL.
4. PUMP WORKING FLUID SHALL BE 50% PROPYLENE GLYCOL.



PIPE TRENCH DETAIL 4
NO SCALE

SHELL AND TUBE HEAT EXCHANGER SCHEDULE

MARK	SERVES	TYPE	WATER SIDE (TUBES)				STEAM SIDE (SHELL)		MANUFACTURER & MODEL NO.	REMARKS
			GPM	E.W.T.	L.W.T.	P.D. (FT.)	PSIG	LB/HR		
HX-1	HEATING HOT WATER SYSTEM	STEAM TO HOT WATER	70	140° F	155° F	2.0	40	490	TRUSH MODEL S6-24-2A	1, 2

REMARKS:

1. TUBESIDE WORKING FLUID SHALL BE 50% PROPYLENE GLYCOL.
2. HEAT EXCHANGER SHALL BE MOUNTED ON FACTORY ASSEMBLED AND PACKAGED SKID BY TIGERFLOW OR APPROVED EQUAL.

HYDRONIC SYSTEM SPECIALTIES SCHEDULE

MARK	SERVES	TYPE	GPM	HEAD (FT)	GAL.	CONNECTION (IN)	MANUFACTURER & MODEL NO.	REMARKS
ET-1	HEATING SYSTEM	BLADDER TYPE EXPANSION TANK	---	---	23.0	1	PATTERSON MODEL NLA-85	1, 2
AS-1	HEATING SYSTEM	COELESCING AIR SEPARATOR	70	---	---	2	THRUSH MODEL HVR-2	1
GF-1	HEATING SYSTEM	GLYCOL FEED SYSTEM	---	---	15	---	GENERAL TREATMENT PRODUCTS GP15-E4-1	1

REMARKS:

1. ALL EQUIPMENT SHALL BE MOUNTED ON A FACTORY PRE-ASSEMBLED SKID MANUFACTURED BY TIGERFLOW OR APPROVED EQUAL.
2. FULL ACCEPTANCE VOLUME INDICATED. ASME CERTIFIED TANK.

REGISTER - GRILLE - DIFFUSER SCHEDULE

MARK	FUNCTION	TYPE	CFM RANGE	MAX N.C.	SIZE (INCHES)	BORDER OR FRAME	MATERIAL		FINISH	ACCESS.	MANUFACTURER & MODEL NO.	REMARKS
							ALUM.	STEEL				
S-1	SUPPLY	LINEAR SLOT	480	25	4' LONG X (5) 1-INCH SLOTS	SURFACE MOUNT	X		STND. WHITE	-	KRUEGER SERIES 1900	1, 2, 3

REMARKS:

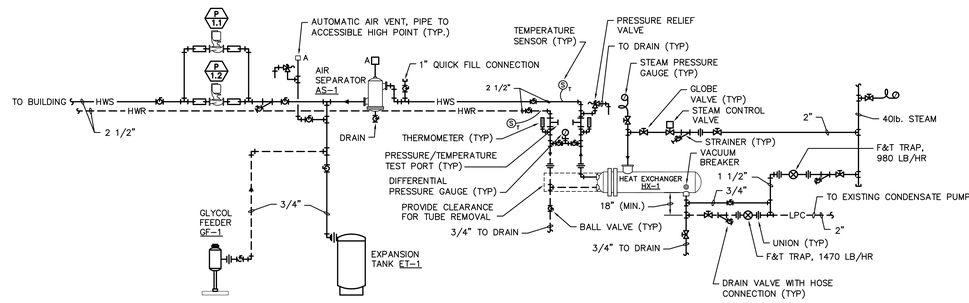
1. PROVIDE SPECIFIC NOISE CRITERIA (NC) DATA FOR EACH LINE ITEM WITH SHOP DRAWINGS.
2. COORDINATE BORDER OR FRAME TYPE WITH CEILING TYPE. SEE ARCHITECTURAL CEILING PLANS.
3. COORDINATE FINISH WITH ARCHITECT.

DUCTWORK INSULATION SCHEDULE

DUCTWORK SYSTEM	ACOUSTICAL LINER	FLEXIBLE FIBERGLASS	RIGID FIBERGLASS	THICKNESS (INCHES)	REMARKS
INDOOR SUPPLY DUCTWORK FROM RTU	---	X	---	2"	---
OUTDOOR SUPPLY DUCTWORK FROM RTU		---	X	2"	1

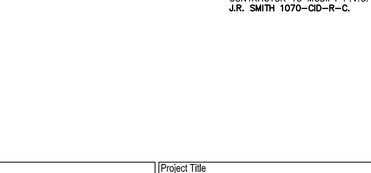
REMARKS:

1. PROVIDE FIBERGLASS RIGID BOARD INSULATION AND ALUMINUM WEATHER-TIGHT JACKET.

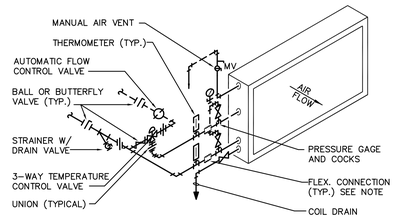


NOTE: ALL EQUIPMENT, CONNECTING PIPING, VALVES AND FITTINGS SHOWN SHALL BE FACTORY ASSEMBLED ON PRE-PACKAGED SKID.

HEATING HOT WATER SYSTEM PIPING SCHEMATIC 1
NO SCALE



HW CABINET UNIT HEATER PIPING DETAIL 2
NO SCALE



NOTE: ROUTE ALL PIPING FOR EASY REMOVAL OF THE COIL.
DELETE FLEXIBLE CONNECTION IF FAN IS INTERNALLY ISOLATED.

HOT WATER HEATING COIL DETAIL (3-WAY VALVE) 3
NO SCALE

ROOF DRAIN: RD-1

FIXTURE
CAST IRON ROOF DRAIN WITH DUCO CAST IRON BODY, COMBINED FLASHING CLAMP RING WITH INTEGRAL GRAVEL STOP, LARGE SUMP RECEIVER WITH WIDE ROOF FLANGE, BOTTOM OUTLET, DECK CLAMP ASSEMBLY AND LARGE LOW PROFILE CAST IRON DOME.
J.R. SMITH 1010-CID-R-C.

OVERFLOW DRAIN: OD-1

FIXTURE
OVERFLOW, CAST IRON ROOF DRAIN WITH DUCO CAST IRON BODY, COMBINED FLASHING CLAMP RING WITH INTEGRAL GRAVEL STOP, P.V.C. STANDPIPE (2" WATER DEPTH), LARGE SUMP RECEIVER WITH WIDE ROOF FLANGE, BOTTOM OUTLET, DECK CLAMP ASSEMBLY AND LARGE LOW PROFILE CAST IRON DOME. CONTRACTOR TO MODIFY P.V.C. STANDPIPE TO MEET LOCAL CODE REQUIREMENTS.
J.R. SMITH 1070-CID-R-C.

Revisions:	Date

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ELECTRICAL SYMBOLS LEGEND
(AS APPLICABLE)

SWITCHING

SYMBOL	DESCRIPTION
$a	SINGLE POLE SWITCH - LETTER INDICATES SWITCH LEG
$2	DOUBLE POLE SWITCH
$3	THREE-WAY SWITCH
$4	FOUR-WAY SWITCH
$D	DIMMER SWITCH
$H	HORSEPOWER RATED SWITCH
$F	FUSED SWITCH
$TE	THERMAL ELEMENT
(T)	LOW VOLTAGE SWITCH - NUMBER INDICATES TYPE

SYMBOL	DESCRIPTION
$M	MOMENTARY CONTACT SWITCH
$K	KEY OPERATED SWITCH
$P	PILOT LIGHT SWITCH
$T	TIMER SWITCH
$OS	OCCUPANCY SENSOR - WALL SWITCH
OS	OCCUPANCY SENSOR - CEILING MOUNTED
OS	OCCUPANCY SENSOR - WALL MOUNTED

} DASHED LINE INDICATES GROUPS OF LUMINAIRES TO BE CONTROLLED BY OCCUPANCY SENSOR(S).

LIGHTING

	LUMINAIRE
	LUMINAIRE - LAMPS SWITCHED SEPARATE
	LUMINAIRE WITH AUXILIARY LIGHT
	LUMINAIRE - EMERGENCY
	LUMINAIRE - NIGHT LIGHT
	WALL MOUNTED LUMINAIRE
	WALL MOUNTED LUMINAIRE - EMERGENCY
	WALL MOUNTED LUMINAIRE - NIGHT LIGHT
	STRIP LUMINAIRE
	STRIP LUMINAIRE - EMERGENCY
	STRIP LUMINAIRE - NIGHT LIGHT
	LUMINAIRE
	LUMINAIRE - NIGHT LIGHT
	LUMINAIRE - EMERGENCY

	WALL MOUNTED LUMINAIRE
	WALL MOUNTED LUMINAIRE - NIGHT LIGHT
	WALL MOUNTED LUMINAIRE - EMERGENCY
	EXIT SIGN
	PHOTOCELL, DAYLIGHT SENSOR
	EXTERIOR LUMINAIRE - POLE MOUNTED
	EXTERIOR LUMINAIRE - BOLLARD
	EXTERIOR LUMINAIRE - POLE MOUNTED
	EXTERIOR LUMINAIRE - BOLLARD
	FLOOD LIGHT LUMINAIRE
	EMERGENCY BATTERY PACK
	EMERGENCY LUMINAIRE REMOTE HEADS
	COMBINATION EXIT SIGN/EMERGENCY LIGHTING UNIT
	TRACK LUMINAIRE

POWER DEVICES

	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	FOUR-PLEX RECEPTACLE - TWO DUPLEX RECEPTACLES
	RANGE RECEPTACLE
	SPECIAL RECEPTACLE
G	DUPLEX RECEPTACLE - GROUND-FAULT CIRCUIT-INTERRUPTER
IG	DUPLEX RECEPTACLE - ISOLATED GROUND
WR	DUPLEX RECEPTACLE - WEATHER-RESISTANT GROUND-FAULT CIRCUIT-INTERRUPTER
A	DUPLEX RECEPTACLE - ON APPLIANCE CIRCUIT
T	DUPLEX RECEPTACLE - TAMPER-RESISTANT
F	DUPLEX RECEPTACLE - ARC-FAULT RATED
M	DUPLEX RECEPTACLE - MOUNTED IN MILLWORK
B	DUPLEX RECEPTACLE - MOUNTED BELOW COUNTER
	DUPLEX RECEPTACLE - CEILING MOUNTED
	DUPLEX RECEPTACLE - BOTTOM HALF SWITCHED
	SPLIT-WIRE RECEPTACLE
J	JUNCTION BOX

	LIGHTING & APPLIANCE PANELBOARD
	POWER DISTRIBUTION EQUIPMENT
T	TRANSFORMER
	ENCLOSED CIRCUIT BREAKER
	CABINET (TYPE INDICATED)
	MOTOR STARTER, LIGHTING CONTACTOR
	SAFETY SWITCH
	COMBINATION MOTOR STARTER & SAFETY SWITCH
	MOTOR
J 6'	CORD DROP (J-BOX AT CEILING)
6'	CORD DROP (SPECIAL RECEPTACLE AT CEILING)
	MULTI-OUTLET ASSEMBLY
	FLUSH FLOOR BOX
	FLUSH POKE-THRU
	DAMPER
S	SOLENOID

RACEWAYS

	HOME RUN TO PANEL
	UNSWITCHED LIGHTING CIRCUIT
	MASTER SATELLITE FIXTURE CONNECTION
E	EMERGENCY CIRCUIT
NL	NIGHT LIGHTING CIRCUIT
S	SOUND SYSTEM RACEWAY

T	TELEPHONE CONDUIT
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT SEAL
	CABLE TRAY
#"	CONDUIT SLEEVE (NUMBER INDICATES SIZE)

MISCELLANEOUS

XX / XXX	EQUIPMENT IDENTIFICATION TAG
	DETAIL REFERENCE / SHEET REFERENCE
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
HOA	HAND-OFF-AUTO
CCT.	CIRCUIT
PART. CCT.	PARTIAL CIRCUIT

NF	NON-FUSED
WP	WEATHER-PROOF
WG	WIRE GUARD
XP	EXPLOSION PROOF
303/10/3R	RATED AMPACITY/NO. POLES/FUSING REQ'D/NEMA ENCL. NO.
X	PROJECTOR INPUT STATION - LETTER INDICATES TYPE
	PROJECTOR CONTROL STATION
	LIGHT LINEWORK = EXISTING OR DEMOLITION
	DARK LINEWORK = NEW

COMMUNICATIONS

	TELEPHONE CABINET
W	TELEPHONE OUTLET - WALL MOUNTED
#	TELEPHONE OUTLET BOX
#	DATA OUTLET BOX
#	PHONE OUTLET BOX - CEILING MOUNTED
#	DATA OUTLET BOX - CEILING MOUNTED
	COMBINATION TELEPHONE/DATA OUTLET BOX - ONE JACK EACH
	DATA OUTLET BOX - BLANK PLATE, 1" CONDUIT
M #	MICROPHONE OUTLET (NUMBER INDICATES QUANTITY)
M #	MICROPHONE OUTLET - WALL MOUNTED (NUMBER INDICATES QUANTITY)
L #	LINE INPUT OUTLET (NUMBER INDICATES QUANTITY)
L #	LINE INPUT OUTLET - WALL MOUNTED (NUMBER INDICATES QUANTITY)
S	INTERCOM/PAGING SPEAKER - CEILING MOUNTED
S	INTERCOM/PAGING SPEAKER - WALL MOUNTED
S	INTERCOM/PAGING SPEAKER HORN - WALL MOUNTED
S	SOUND SYSTEM SPEAKER - CEILING MOUNTED
S	SOUND SYSTEM SPEAKER - WALL MOUNTED

} NUMBER BY SYMBOL INDICATES QUANTITY OF JACKS. ZERO INDICATES EMPTY OUTLET BOX, BLANK PLATE AND CONDUIT.

C	CLOCK HANGER OUTLET
C	CLOCK - WALL MOUNTED
C 2	CLOCK - CEILING MOUNTED (DOUBLE FACE)
CS	CLASSROOM CLOCK & SPEAKER
P	PROGRAM BELL
	INTERCOM CALL SWITCH
X	INTERCOM ADMINISTRATION STATION (LETTER INDICATES TYPE)
X	INTERCOM CLASSROOM/STAFF STATION (LETTER INDICATES TYPE)
X	AUDIO/VISUAL AUXILIARY OUTLET (LETTER INDICATES TYPE)
A	T.V. ANTENNA OUTLET
V	INTERCOM/PAGING VOLUME CONTROL
V	SOUND SYSTEM VOLUME CONTROL
	GROUND BAR

NOTE: SYMBOLS SHOWN "STACKED" ON THE FLOOR PLANS INDICATE THAT THE DEVICES ARE TO BE LOCATED IN THE SAME OUTLET BOX AND FACEPLATE. (I.E. 1 / 2)

FIRE ALARM

R/T	HEAT DETECTOR - COMBINATION
F	HEAT DETECTOR - FIXED TEMPERATURE
EV	HEAT DETECTOR - FIXED TEMPERATURE (CONNECTED TO ELEVATOR RECALL)
	SMOKE DETECTOR
DM	SMOKE DETECTOR - DUCT MOUNTED
EV	SMOKE DETECTOR (CONNECTED TO ELEVATOR RECALL)
F	FIRE ALARM MANUAL STATION
F	FIRE ALARM HORN - WALL MOUNTED
	FIRE ALARM VISUAL SIGNAL - WALL MOUNTED
	FIRE ALARM COMBINATION HORN/VISUAL - WALL MOUNTED
F	FIRE ALARM SPEAKER - WALL MOUNTED

F	FIRE ALARM COMBINATION SPEAKER/VISUAL - WALL MOUNTED
F	FIRE ALARM BELL - WALL MOUNTED
F	FIRE ALARM HORN - CEILING MOUNTED
	FIRE ALARM VISUAL SIGNAL - CEILING MOUNTED
	FIRE ALARM COMBINATION HORN/VISUAL - CEILING MOUNTED
F	FIRE ALARM SPEAKER - CEILING MOUNTED
	FIRE ALARM COMBINATION SPEAKER/VISUAL - CEILING MOUNTED
	FLOW SWITCH
	TAMPER SWITCH
	DUCT DETECTOR REMOTE ALARM INDICATOR
R	FAN SHUT-DOWN RELAY
	MAGNETIC DOOR HOLDER

SECURITY

	PUSHBUTTON STATION
	PUSHBUTTON STATION, "P" INDICATES PILOT
	DOOR MONITOR SWITCH
	DOOR SWITCH
	DOOR BELL CHIME/BUZZER
	DOOR CONTACT

	MOTION DETECTOR
KP	KEYPAD
ES	ELECTRIC STRIKE
CR	CARD READER
PS	POWER SUPPLY
	SECURITY CAMERA

GENERAL ELECTRICAL DEMOLITION NOTES

A. THE CONTRACTOR SHALL COMPLETELY REMOVE ALL ELECTRICAL WIRING, CONDUIT, SWITCHES, DISCONNECTS, LIGHTING FIXTURES AND OTHER ASSOCIATED ITEMS AS SHOWN. THE ITEMS INDICATED SPECIFICALLY ON THE DRAWINGS TO BE REMOVED ARE ONLY TO INDICATE IN GENERAL TO THE CONTRACTOR THE AMOUNT OF DEMOLITION WORK INVOLVED. A SITE INVESTIGATION BY THE CONTRACTOR SHOULD BE PERFORMED TO AID IN DETERMINING THE COMPLETE EXTENT OF WORK INVOLVED.

B. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL NECESSARY POWER OUTAGES WITH THE OWNERS REPRESENTATIVE PRIOR TO PROCEEDING WITH SUCH WORK TO INSURE THAT OPERATIONS IN ADJACENT OCCUPIED PORTIONS OF THE BUILDING ARE NOT INTERRUPTED OR RESTRICTED WITHOUT PRIOR APPROVAL.

C. ALL EXISTING BRANCH CIRCUITS BEING REMOVED SHALL BE REMOVED AS COMPLETELY AS POSSIBLE. EXISTING CONDUCTORS SHALL BE REMOVED COMPLETELY FROM THEIR RACEWAYS, DISPOSED OF AS SCRAP, REMOVED FROM SITE AND NOT REUSED EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. WHERE AN EXISTING DEVICE IS SHOWN REMOVED FROM AN EXISTING CIRCUIT, NEW WIRING SHALL BE PROVIDED AS REQUIRED TO ENSURE CONTINUITY OF EXISTING CIRCUIT. ELECTRICAL RACEWAYS WHERE STUBBED FROM A CONCRETE FLOOR OR WALL SHALL BE CHISELED 2 INCHES BELOW SURFACE, GROUTED AND SCREED.

D. ALL EXISTING LIGHT FIXTURES, LAMPS, AND ELECTRICAL EQUIPMENT SHOWN TO BE REMOVED SHALL BE REMOVED BY THE CONTRACTOR. EXISTING FIXTURES AND EQUIPMENT CONSIDERED SALVAGEABLE BY THE OWNER AND NOT SHOWN TO BE REUSED SHALL BE TURNED OVER TO THE OWNER OR REMOVED FROM SITE AS DIRECTED BY OWNER. LAMPS AND BALLASTS THAT ARE CONSIDERED AS HAZARDOUS WASTE SHALL BE DISPOSED OF PROPERLY.

E. ALL EXISTING SURFACE MOUNTED BACKBOXES, CONDUIT, WIREWAY, JUNCTION BOXES, ETC. SHOWN REMOVED SHALL BE REMOVED IN THEIR ENTIRETY. ALL RECESSED BACKBOXES, JUNCTION BOXES SHOWN REMOVED SHALL BE ABANDONED IN PLACE AND COVERED WITH STAINLESS STEEL COVER PLATES. ALL RECESSED CONDUIT SHALL BE ABANDONED IN PLACE AND CAPPED OFF IN A SUITABLE MANNER PER LOCAL INSPECTORS REQUIREMENTS.

F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING, PAINTING, REPAIRING OR REPLACEMENT OF ALL WALL, CEILING, OR OTHER BUILDING ELEMENTS WHICH ARE DISTURBED AS PART OF THE DEMOLITION OR INSTALLATION OF ELECTRICAL WORK.

G. REMOVE ELECTRICAL CONNECTIONS TO ALL MECHANICAL EQUIPMENT BEING REMOVED BY DIVISION 23. COORDINATE EQUIPMENT REMOVAL LOCATIONS WITH MECHANICAL DRAWINGS.

H. COORDINATE EXISTING BOXES AND CONDUIT WHICH ARE TO BE REUSED WITH NEW WORK AS INDICATED ON LIGHTING AND POWER DRAWINGS.

GENERAL ELECTRICAL NOTES

A. ALL WIRING SHALL BE INSTALLED IN CONTINUOUS RACEWAY.

B. ALL CONDUITS IN NEW WALLS, EXISTING STUD WALLS, OR IN AREAS WITH SUSPENDED CEILINGS SHALL BE INSTALLED CONCEALED.

C. BRANCH CIRCUIT AND SPECIAL SYSTEMS WIRING FOR DEVICES ON EXISTING WALLS OR EXPOSED CEILINGS WHERE RACEWAY CANNOT BE CONCEALED SHALL BE INSTALLED IN SURFACE METAL RACEWAY.

D. ALL EXPOSED RACEWAY IN ROOMS TO BE PAINTED SHALL BE PAINTED TO MATCH SURROUNDING SURFACE. COORDINATE FINISHES WITH ARCHITECT. ALL EXPOSED RACEWAY AND FITTINGS IN ROOMS WHICH ARE NOT TO BE PAINTED SHALL BE WIREMOLD #V500 OR #V700 SERIES WITH FACTORY IVORY FINISH.

E. SURFACE RACEWAY FOR TELECOMMUNICATION CABLE SHALL NOT BE SMALLER THAN WIREMOLD #V2400. ALL FITTINGS FOR TELECOMMUNICATION RACEWAYS SHALL COMPLY WITH EIA STANDARDS FOR BEND RADIUS.

F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING, PAINTING, REPAIRING OR REPLACEMENT OF ALL WALLS, CEILINGS, OR OTHER BUILDING ELEMENTS WHICH ARE DISTURBED AS PART OF THE DEMOLITION OR INSTALLATION OF ELECTRICAL WORK.

G. REFER TO MECHANICAL/ELECTRICAL COORDINATION SCHEDULE SHEET M3.1 FOR ADDITIONAL REQUIREMENTS FOR DISCONNECTS, MOTOR STARTERS, ETC.

H. LABELING FOR PANELBOARD DIRECTORIES, FIRE ALARM PANEL PROGRAMMING, ETC. SHALL USE ROOM NUMBERS ASSIGNED BY OWNER AND NOT ROOM NUMBERS LISTED ON DRAWINGS. LABELS ON PANELBOARD DIRECTORY SHALL INCLUDE A DESCRIPTION OF LOAD SUCH AS LIGHTS, RECEPTACLES, MECH. UNIT LOCATIONS, ETC.

I. MULTIWIRE BRANCH CIRCUITS AS DEFINED BY THE NATIONAL ELECTRICAL CODE (CIRCUITS WITH COMMON NEUTRAL) SHALL NOT BE USED. EXCEPTION: WHERE AN EQUIPMENT MANUFACTURER REQUIRES A MULTIWIRE BRANCH CIRCUIT FOR ONLY ONE UTILIZATION EQUIPMENT AND WHERE ALL UNGROUNDED CONDUCTORS OF THAT CIRCUIT ARE OPENED SIMULTANEOUSLY BY THE BRANCH CIRCUIT OVERCURRENT DEVICE.

J. A CABLE OR RACEWAY TYPE WIRING METHOD, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS NEAR METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THE NEAREST OUTER SURFACE OF THE CABLE OR RACEWAY IS NOT LESS THAN 6 INCHES FROM THE NEAREST SURFACE OF THE ROOF DECKING. EXCEPTION: RIGID METAL CONDUIT AND INTERMEDIATE METAL CONDUIT SHALL NOT BE REQUIRED TO MAINTAIN THIS CLEARANCE.

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

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Revisions:	Date

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Drawing Title: ELECTRICAL SYMBOLS AND GENERAL NOTES

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC

Location: VAMC Omaha Nebraska

Project Number: 636-13-122

Building Number: ONE

Drawing Number: E0.1

Date: MAY 10, 2013 | Checked: RJH | Drawn: DMM

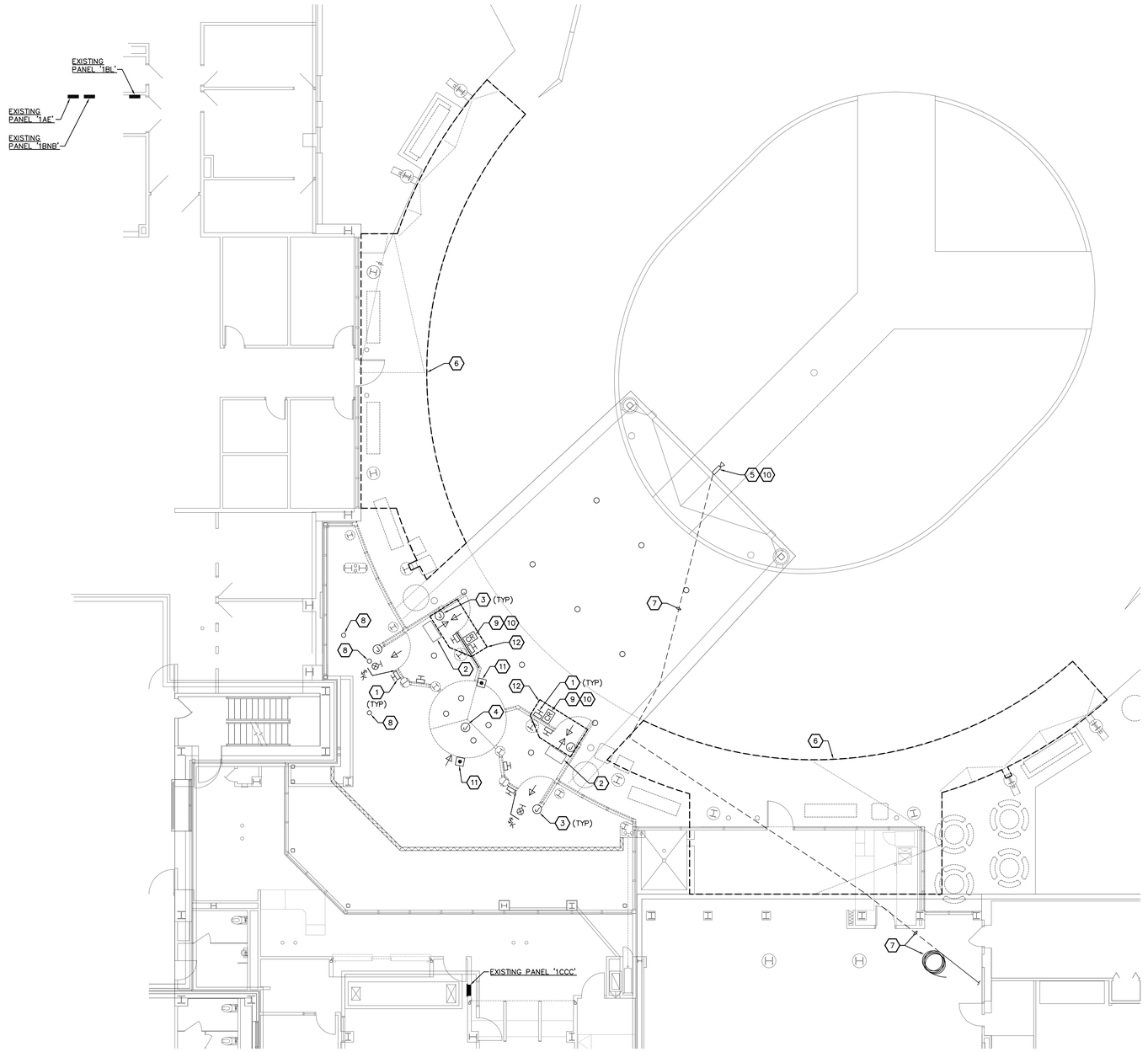
Dwg. 31 of 36

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

SEE 'GENERAL ELECTRICAL DEMOLITION NOTES', SHEET E0.1, FOR ADDITIONAL ELECTRICAL REQUIREMENTS



1 E1.1 PARTIAL FIRST FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

ELECTRICAL DEMOLITION KEYNOTES: (⬡)

1. DISCONNECT AND REMOVE DOOR ACTUATOR FROM DOOR OR WINDOW MULLION UNLESS NOTED OTHERWISE (SEE KEYNOTE 12).
2. REMOVE ELECTRICAL CONNECTION TO HVAC EQUIPMENT.
3. REMOVE ELECTRICAL CONNECTION TO DOOR OPERATOR. RETAIN EXISTING CIRCUITING IN SPACE FOR EXTENSION AND CONNECTION TO TEMPORARY 'MAIN' ENTRY AND PERMANENT NEW ENTRY DOOR OPERATOR. EXISTING CIRCUIT ORIGINATES OUT OF PANEL '1CCB'. SEE SHEET E3.2 FOR EXISTING PANEL '1CCB' LOCATION.
4. REMOVE 208 VOLT, SINGLE PHASE ELECTRICAL CONNECTION TO REVOLVING DOOR. RETAIN EXISTING CIRCUITING IN SPACE FOR EXTENSION AND CONNECTION TO NEW DOOR OPERATOR. EXISTING CIRCUIT ORIGINATES OUT OF PANEL '1CCB'. SEE SHEET E3.2 FOR EXISTING PANEL '1CCB' LOCATION.
5. DISCONNECT AND CAREFULLY REMOVE SECURITY CAMERA AND MOUNTING BRACKET. SALVAGE AND PROTECT SECURITY CAMERA AND MOUNTING BRACKET FOR REINSTALLATION UPON COMPLETION OF CANOPY WORK.
6. REMOVE LIGHTNING PROTECTION SYSTEM (AIR TERMINALS, LOOP CONDUCTOR, BONDS, CABLE HOLDERS, ETC.) IN ITS ENTIRETY AT ROOF LEVEL WITHIN OUTLINED AREA. MAINTAIN DOWNLEAD CONNECTION(S) AT EXISTING STRUCTURAL STEEL AND CONNECTION(S) BETWEEN ADJACENT ROOF SYSTEMS AS APPLICABLE FOR RECONNECTION TO NEW LIGHTNING PROTECTION SYSTEM.
7. APPROXIMATE ROUTING OF SECURITY CAMERA CABLING IN LIQUIDTIGHT, FLEXIBLE METAL CONDUIT LAID ACROSS THE TOP OF EXISTING MULTIPLE ROOF LEVELS. DISCONNECT CAMERA (KEYNOTE 5), PULL BACK RACEWAY, WITH CABLING, FROM ACROSS ROOFS AND COIL AT APPROXIMATE LOCATION INDICATED TO ALLOW FOR ROOF WORK IN REMODELED AREA(S). SALVAGE AND PROTECT EXISTING SECURITY CAMERA CABLING AND RACEWAY THROUGHOUT PROJECT FOR RECONNECTION TO RELOCATED CAMERA.
8. DISCONNECT AND REMOVE EXISTING DOWNLIGHT INSTALLED AT CLERESTORY CEILING TO MISS CONSTRUCTION OF HORIZONTAL DUCTWORK CHASE. SALVAGE, STORE AND PROTECT LUMINAIRE FOR REINSTALLATION IN EXISTING CEILING. RETAIN EXISTING, SWITCHED LIGHTING CIRCUIT IN EXISTING SPACE FOR RECONNECTION TO RELOCATED LUMINAIRE. REFER TO SHEET E2.1, KEYNOTE 7, FOR ADDITIONAL INFORMATION.
9. DISCONNECT AND CAREFULLY REMOVE SECURITY SYSTEM KEY PACS CARD READER INSTALLED TO WINDOW MULLION. RETAIN EXISTING SECURITY SYSTEM WIRING IN SPACE FOR EXTENSION AND RECONNECTION TO RELOCATED CARD READER. SALVAGE AND PROTECT KEY PACS CARD READER AND SYSTEM WIRING FOR REINSTALLATION AT TEMPORARY 'MAIN' (EXISTING) ENTRY AND PERMANENT NEW ENTRY DOOR(S) OPENING SYSTEM.
10. COORDINATE DISCONNECTION OF SECURITY SYSTEM DEVICE WITH VAMC SECURITY PERSONNEL.
11. REMOVE EXTERNAL ELECTRICAL CONNECTIONS TO REVOLVING DOOR EMERGENCY STOP PUSHBUTTONS, AS APPLICABLE, TO ALLOW FOR THE REMOVAL OF DOOR.
12. EXISTING DOOR AND ASSOCIATED OPERATOR, ACTUATORS, SENSORS, SECURITY DEVICES AND CONNECTIONS, AND INTERCONNECTING CIRCUITING (WITHIN OUTLINE) WILL BE RELOCATED TO A TEMPORARY 'MAIN' ENTRANCE DURING ENTRY REMODEL. DISCONNECT ALL EXTERNAL ELECTRICAL CONNECTIONS AS NECESSARY TO ALLOW DOOR TO BE REMOVED AND RELOCATED. RETAIN ALL EXTERNAL ELECTRICAL CONNECTIONS FOR RECONNECTION TO RELOCATED DOOR (ALSO SEE KEYNOTES 3 AND 9 THIS SHEET).

three inches = one foot 6"
one and one half inches = one foot 1 6" 0
one inch = one foot 2 6" 0
three quarters inch = one foot 1 2 6" 0
one half inch = one foot 4 0
three eighths inch = one foot 4 0
one quarter inch = one foot 8 4 0
one eighth inch = one foot 16 8 4 0

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Revisions:	Date

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InfraStructure, LLC ENGINEERING CONSULTING GROUP

Drawing Title: PARTIAL FIRST FLOOR ELECTRICAL DEMOLITION PLAN

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC
Location: VAMC Omaha Nebraska
Date: MAY 10, 2013 | Checked: RJH | Drawn: DMM

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Office of Construction and Facilities Management
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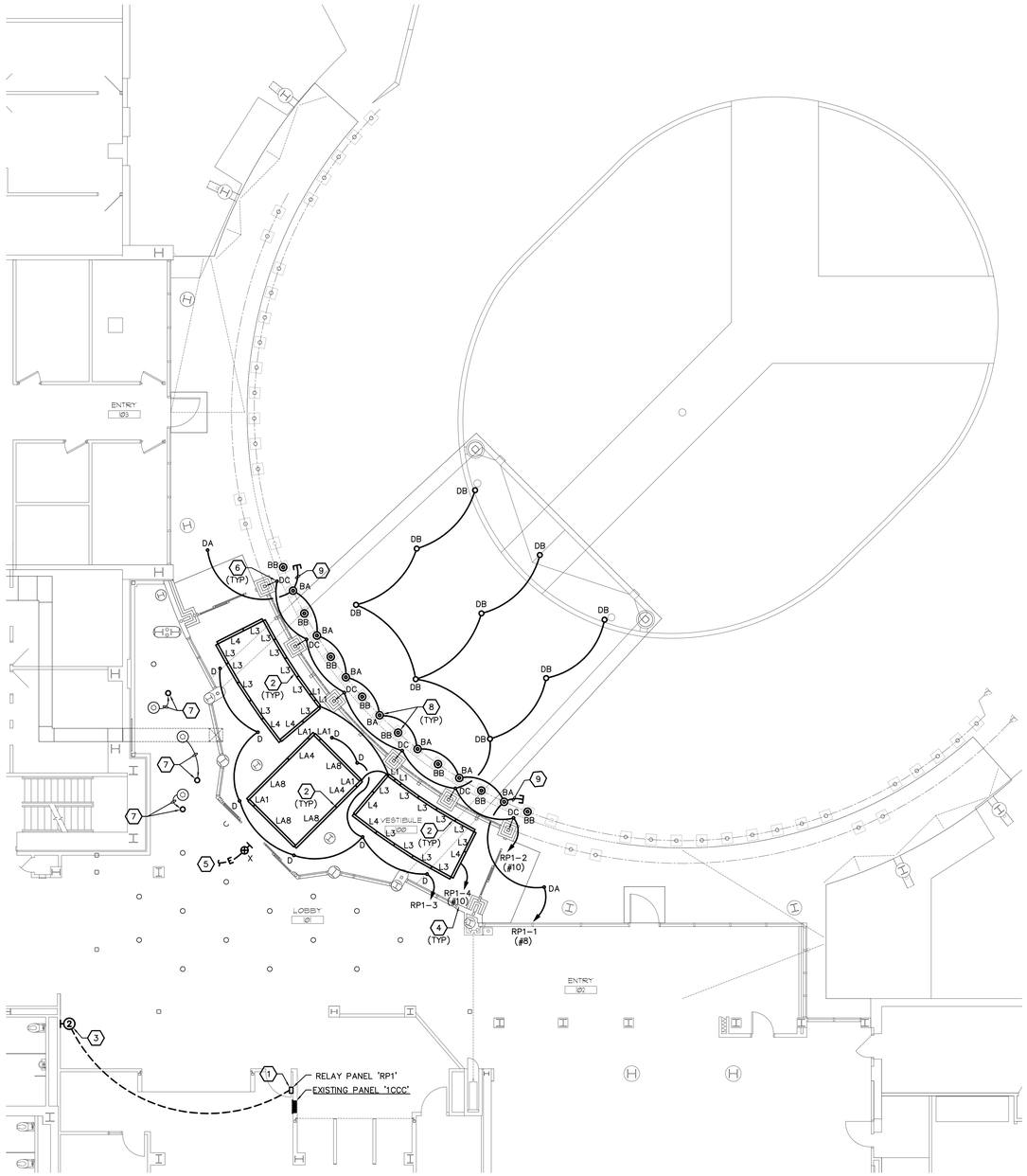

E2.1 PARTIAL FIRST FLOOR LIGHTING PLAN

SCALE: 1/8 INCH = 1 FOOT

12' 0 5' 10' 15'

NORTH

SEE 'GENERAL ELECTRICAL NOTES', SHEET E0.1, FOR ADDITIONAL ELECTRICAL REQUIREMENTS

ELECTRICAL KEYNOTES: (⬡)

1. PROVIDE LC&D DIGITAL MICROPANEL WITH 2N/2E RELAYS IN AN AIR PLENUM RATED ENCLOSURE. PROVIDE SEPARATE ENCLOSURE OR VOLTAGE BARRIER IN PANEL FOR EMERGENCY RELAYS. PROVIDE CAT 5 CABLE BETWEEN ENCLOSURES. PROVIDE TIMECLOCK WITH PROGRAMMING AS INDICATED IN RELAY PANEL SCHEDULE. REFER TO PANEL SCHEDULES FOR ADDITIONAL REQUIREMENTS. WALL-MOUNT MICROPANEL ABOVE ACCESSIBLE CEILING. APPROVED EQUALS ARE WATTSTOPPER, COOPER, CRESTRON, HUBBELL, OR LUTRON.
2. LUMINAIRE TO BE MOUNTED IN ARCHITECTURAL COVE. REFER TO ARCHITECTURAL DETAILS FOR MOUNTING CONDITIONS. CONTRACTOR TO VERIFY QUANTITY/LENGTHS PRIOR TO ORDERING. FILL ENTIRE COVE LENGTH WITH NO MORE THAN 6" UNLIT AT EITHER END. PROVIDE SHIM TO ALIGN TOP OF LUMINAIRE WITH TOP LIP OF COVE AS NECESSARY TO ELIMINATE ANY SHADOWING ON CEILING WHILE ENSURING LUMINAIRES ARE NOT VISIBLE FROM BELOW.
3. PROVIDE LC&D 2-BUTTON CHELSEA DIGITAL CONTROL STATION FOR ON/OFF OVERRIDE OF VESTIBULE LIGHTING CONTROL. CONNECT TO LC&D DIGITAL MICROPANEL. COORDINATE EXACT LOCATION OF CONTROL STATION WITH PROJECT ARCHITECT.
4. NUMBER INDICATES THE MINIMUM WIRE SIZE FOR ENTIRE, INCLUDING WIRING FROM RELAY TO CIRCUIT BREAKER.
5. CONNECT TO NEARBY EXISTING 120V EMERGENCY CIRCUIT.
6. LUMINAIRE TO BE LOCATED 0'-6" FROM FACE OF COLUMN TO CENTER OF LUMINAIRE. CENTER LUMINAIRE WITH COLUMN.
7. RELOCATED, EXISTING DOWNLIGHT INSTALLED AT CLERESTORY CEILING. CONNECT TO EXISTING SWITCHED LIGHTING CIRCUIT. REFER TO SHEET E1.1, KEYNOTE 12, FOR DEMOLITION WORK.
8. BOLLARDS HAVE EMBEDDED SECURITY CORE FOR FORCE PROTECTION. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MOUNTING CONDITIONS.
9. PROVIDE 1" CONDUIT STUB OUT FROM BASE OF BOLLARD FOR FUTURE CONNECTION TO ADDITIONAL BOLLARDS AS PART OF FORCE PROTECTION UPGRADE PROJECT.

RELAY PANEL SCHEDULE "RP1"

RELAY NO.	LOAD DESCRIPTION	PANEL	LOAD (VA)	VOLTAGE	EMERGENCY	CONTROL CAPABILITIES				
						CONTROL STATION	DIM	OCC. SENSOR	TIME CLOCK	PHOTO CELL
1	EXTERIOR DOWNLIGHTS AND BOLLARDS	REMARK 1	1400	120	YES	NO	NO	NO	YES	NO
2	EXTERIOR DOWNLIGHTS	REMARK 2	575	120	NO	NO	NO	NO	YES	NO
3	INTERIOR DOWNLIGHTS	REMARK 2	200	120	NO	YES	NO	NO	YES	NO
4	INTERIOR COVES	REMARK 1	1100	120	YES	YES	NO	NO	YES	NO

SEQUENCE OF OPERATIONS:

RELAY NO. 1 WILL TURN ON (1) HOUR BEFORE SUNSET AND TURN OFF (1) HOUR AFTER SUNRISE.
RELAY NO. 2 WILL TURN ON (1) HOUR BEFORE SUNSET AND TURN OFF (1) HOUR AFTER SUNRISE.
RELAY NO. 3 WILL TURN ON (1) HOUR PRIOR AND TURN OFF (1) HOUR AFTER OWNER-SPECIFIED HOURS OF OPERATION, UNLESS MANUALLY OVERRIDDEN AT CONTROL STATION.
RELAY NO. 4 WILL TURN ON (1) HOUR PRIOR AND TURN OFF (1) HOUR AFTER OWNER-SPECIFIED HOURS OF OPERATION, UNLESS MANUALLY OVERRIDDEN AT CONTROL STATION.

REMARKS:

1. PROVIDE NEW 20 AMP, 1 POLE CIRCUIT BREAKERS COMPATIBLE WITH EXISTING PANEL '1CL' (WESTINGHOUSE) AND INSTALL IN AVAILABLE SPACE. CONNECT EACH INDICATED RELAY TO NEW DEDICATED CIRCUIT BREAKER. SEE SHEET E3.2 FOR LOCATION OF PANEL '1CL'.
2. CONNECT BOTH RELAYS TO A SPARE 20A/1P CIRCUIT IN EXISTING PANEL '1CCC'.

LUMINAIRE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	SERIES	CATALOG NO.	LAMP QTY	LAMP TYPE	FINISH	MOUNTING	INPUT WATTS	VOLTS	ACCEPTABLE MANUFACTURERS	REMARKS
BA	ILLUMINATED STAINLESS STEEL BOLLARD WITH EMBEDDED SECURITY CORE AND 360° SCAPE SHIELD.	FORMS & SURFACES	LIGHT COLUMN SERIES 600	LCO-SEC-604 EMBEDDED SECURITY CORE 360° PERFORATED SHIELD (SCAPE)	2	REMARK 6	REMARK 5	BOLLARD	52 W	120 V	-	4,8
BB	UNLIT STAINLESS STEEL BOLLARD WITH EMBEDDED SECURITY CORE AND 360° SCAPE SHIELD.	FORMS & SURFACES	LIGHT COLUMN SERIES 600	REMARK 7	-	-	REMARK 5	BOLLARD	-	-	-	8
D	2" APERTURE LED DOWNLIGHT. RATED FOR USE IN DAMP LOCATIONS.	PRESCOLITE	D2LED	D2LED-2D9LED-40K-8-WFL45-MFC D2FRM MOUNTING FRAME	-	LED 4000K CCT 1000 LM	CLEAR ALZAK MATTE DIFFUSE	RECESSED	20 W	120 V	LUCIFER USAI	-
DA	4" APERTURE LED DOWNLIGHT. RATED FOR USE IN WET LOCATIONS.	GOTHAM	EVO 4" OPEN	EVO-30/14-4AR-WD-LD-120 RFD - CEILING THICKNESS	-	LED 3000K CCT 1400 LM	CLEAR ALZAK MATTE DIFFUSE	RECESSED	26 W	120 V	LUCIFER USAI	1
DB	8" APERTURE OPEN LED DOWNLIGHT. RATED FOR USE IN WET LOCATIONS.	GOTHAM	EVO 8" OPEN	EVO-30/29-8AR-WD-LD-120	-	LED 3000K CCT 2900 LM	CLEAR ALZAK MATTE DIFFUSE	RECESSED	49 W	120 V	PRESCOLITE PATHWAY OMEGA	-
DC	2" APERTURE LED DOWNLIGHT. RATED FOR USE IN DAMP LOCATIONS.	PRESCOLITE	D2LED	D2LED-2D9LED-30K-8-MD25-MFC MODIFIED - CEILING THICKNESS	-	LED 3000K 1000 LM	CLEAR ALZAK MATTE DIFFUSE	RECESSED	20 W	120 V	LUCIFER	1, 2
L1	1' LENGTH LINEAR LED LUMINAIRE WITH 120° LIGHT DISTRIBUTION, ±90 DEGREE ADJUSTABILITY, END-TO-END CONNECTORS, AND INTEGRAL DRIVER	LUMENPULSE	LUMENCOVE RO	LCS RO-120-12-40K-CL-FT-WH-NO	-	LED 4000K CCT 400 LM/FT	WHITE	COVE	6 W	120 V	COLOR KINETICS TRAXON	-
L3	3' LENGTH LINEAR LED LUMINAIRE WITH 120° LIGHT DISTRIBUTION, ±90 DEGREE ADJUSTABILITY, END-TO-END CONNECTORS, AND INTEGRAL DRIVER.	LUMENPULSE	LUMENCOVE RO	LCS RO-120-36-40K-CL-FT-WH-NO	-	LED 4000K CCT 400 LM/FT	WHITE	COVE	18 W	120 V	COLOR KINETICS TRAXON	-
L4	4' LENGTH LINEAR LED LUMINAIRE WITH 120° LIGHT DISTRIBUTION, ±90 DEGREE ADJUSTABILITY, END-TO-END CONNECTORS, AND INTEGRAL DRIVER.	LUMENPULSE	LUMENCOVE RO	LCS RO-120-48-40K-CL-FT-WH-NO	-	LED 4000K CCT 400 LM/FT	WHITE	COVE	24 W	120 V	COLOR KINETICS TRAXON	-
LA1	1' LENGTH LINEAR LED LUMINAIRE WITH 120° LIGHT DISTRIBUTION, ±90 DEGREE ADJUSTABILITY, END-TO-END CONNECTORS, AND INTEGRAL DRIVER.	LUMENPULSE	LUMENCOVE HO	LCS HO-120-12-40K-CL-FT-WH-NO	-	LED 4000K CCT 750 LM/FT	WHITE	COVE	12 W	120 V	COLOR KINETICS TRAXON	-
LA4	4' LENGTH LINEAR LED LUMINAIRE WITH 120° LIGHT DISTRIBUTION, ±90 DEGREE ADJUSTABILITY, END-TO-END CONNECTORS, AND INTEGRAL DRIVER.	LUMENPULSE	LUMENCOVE HO	LCS HO-120-48-40K-CL-FT-WH-NO	-	LED 4000K CCT 750 LM/FT	WHITE	COVE	48 W	120 V	COLOR KINETICS TRAXON	-
LA8	8' LENGTH LINEAR LED LUMINAIRE WITH 120° LIGHT DISTRIBUTION, ±90 DEGREE ADJUSTABILITY, END-TO-END CONNECTORS, AND INTEGRAL DRIVER.	LUMENPULSE	LUMENCOVE HO	LCS HO-120-96-40K-CL-FT-WH-NO	-	LED 4000K CCT 750 LM/FT	WHITE	COVE	96 W	120 V	COLOR KINETICS TRAXON	-
X	LED EXIT SIGN - SINGLE FACE WITH RED LETTERS	LITHONIA	QUANTUM	LQC-1-R	-	LED	MATTE BLACK / ALUMINUM FACE	SURFACE	1 W	120 V	SURE-LITES DUAL-LITE HUBBELL	3

LUMINAIRE SCHEDULE REQUIREMENTS:

A. SUBMIT SHOP DRAWINGS FOR EACH LUMINAIRE, BALLAST, AND LAMP TYPE USED ON PROJECT.
B. CONTRACTOR SHALL FIELD VERIFY VOLTAGE OF ALL LUMINAIRES PRIOR TO ORDERING.
C. BALLASTS FOR LINEAR FLUORESCENT T5 & T5HO LAMPS SHALL BE GE ULTRASTART SERIES (OR EQUAL BY ADVANCE OPTANIUM SERIES). BALLAST CHARACTERISTICS SHALL BE: PROGRAMMED START, OPERATING VOLTAGE RANGE OF 120-277V ±10%, BALLAST FACTOR GREATER THAN 0.99 (U.N.O.), THD OF 10% OR LESS, PF GREATER THAN 0.95, AND A FIVE YEAR WRITTEN REPLACEMENT WARRANTY FROM DATE OF MANUFACTURE.
D. PHILIPS, OSRAM/SYLVANIA, G.E. AND VENTURE ARE ACCEPTABLE LAMP MANUFACTURERS.
E. ALL FLUORESCENT LAMPS SHALL BE LOW MERCURY TCLP COMPLIANT TYPE.
F. LED LUMINAIRE TO HAVE FIELD-REPLACABLE MODULE AND COMPONENTS (POWER SUPPLY, DRIVER, ETC), SERVICEABLE FROM BELOW CEILING.
G. DOWNLIGHTS SHALL HAVE ALZAK FINISH SELF-TRIMMING REFLECTORS, UNLESS SPECIFIED OTHERWISE. DOWNLIGHTS SHALL HAVE HARDWARE MOUNTING FOR REFLECTOR; SPRING CLIPS ARE NOT ACCEPTABLE.
H. PROVIDE FACTORY INSTALLED INTEGRAL DISCONNECTING MEANS FOR FLUORESCENT LIGHT LUMINAIRES PER 2011 NEC ARTICLE 410.130.(G). NOTE THAT EXCEPTION NO. 4 AND EXCEPTION NO. 5 WILL NOT BE ACCEPTED.

LUMINAIRE SCHEDULE REMARKS:

1. LUMINAIRE SHALL BE CAPABLE OF BEING MOUNTED IN 2-1/8" THICK CEILING.
2. LUMINAIRE UTILIZES COMPACT REMODEL-STYLE HOUSING.
3. REFER TO DRAWINGS FOR MOUNTING REQUIREMENTS SUCH AS WALL MOUNT, END MOUNT, CEILING MOUNT AND PROVIDE LUMINAIRES ACCORDINGLY. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS.
4. PROVIDE COLD WEATHER BALLAST RATED FOR NO HIGHER THAN -15°F MINIMUM STARTING TEMPERATURE.
5. CUSTOM RAL POWDERCOAT COLOR TO BE SELECTED BY ARCHITECT. SHIELDING FINISH TO MATCH HOUSING.
6. PROVIDE F24T5HO/830 3000K LAMPS WITH AMALGAM TECHNOLOGY FOR LOW STARTING TEMPERATURES.
7. PROVIDE UNLIT VERSION OF LCO-SEC-604 BOLLARD WITH EMBEDDED SECURITY CORE AND 360° PERFORATED SHIELD (SCAPE).
8. BOLLARDS HAVE EMBEDDED SECURITY CORE FOR FORCE PROTECTION. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MOUNTING DETAILS.

Revisions: | Date

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Drawing Title: PARTIAL FIRST FLOOR LIGHTING PLAN

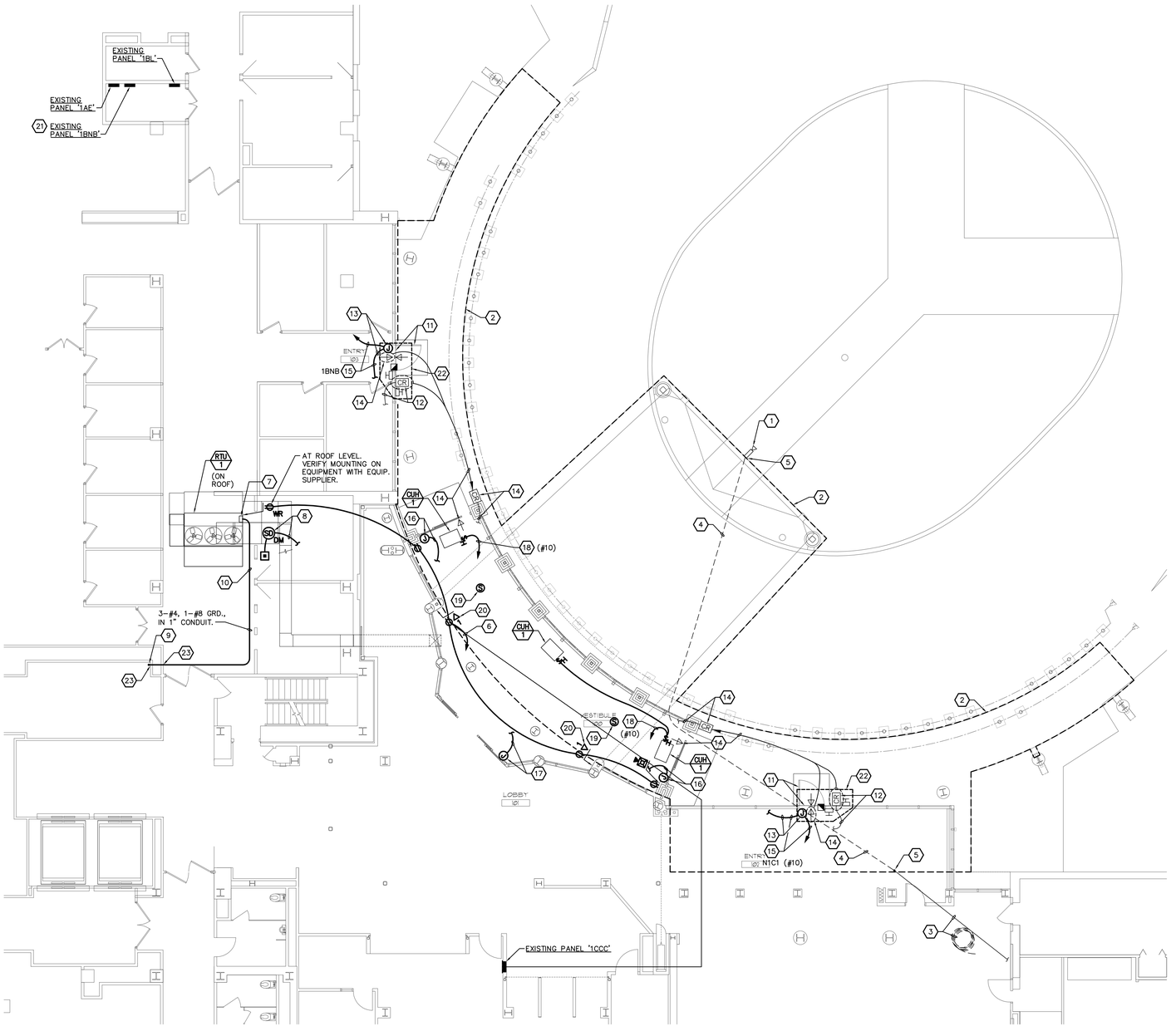
CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC
Location: VAMC Omaha Nebraska
Date: MAY 10, 2013 | Checked: RJH | Drawn: SPG

Project Number: 636-13-122
Building Number: ONE
Drawing Number: E2.1
Dwg. 33 of 36

Office of Construction and Facilities Management
Department of Veterans Affairs

SEE 'GENERAL ELECTRICAL NOTES', SHEET E0.1, FOR ADDITIONAL ELECTRICAL REQUIREMENTS



1 E3.1 PARTIAL FIRST FLOOR POWER & SPECIAL SYSTEMS PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

ELECTRICAL KEYNOTES: (⬡)

1. REINSTALL EXISTING SALVAGED SECURITY CAMERA AND MOUNTING BRACKET AFTER COMPLETION OF CANOPY FASCIA, SOFFIT, TRIM, ETC. WORK. INSTALL DEVICES SECURELY TO CANOPY FASCIA AS PREVIOUS INSTALLATION.
2. PROVIDE NEW LIGHTNING PROTECTION SYSTEM TO OUTLINED PORTION OF STRUCTURE AFTER NEW ROOF WORK IS COMPLETE ON ALL ROOF SECTIONS INDICATED. PROVIDE CONNECTION FOR NEW SYSTEM TO EXISTING DOWNLEAD AND ADJACENT ROOF SYSTEMS CONNECTION(S) AS APPLICABLE. SEE KEYNOTE 6, SHEET E1.1.
3. EXISTING SALVAGED SECURITY SYSTEM CABLING IN LIQUID TIGHT, FLEXIBLE, METAL CONDUIT (KEYNOTE 7, SHEET E1.1). EXTEND RACEWAY CONTAINING CABLING TO CAMERA LOCATION, KEYNOTE 1, AND CONNECT. SECURE RACEWAY TO BUILDING STRUCTURE AT INTERVALS NOT TO EXCEED THOSE PER THE N.E.C.
4. COORDINATE INSTALLATION OF THIS PORTION OF EXISTING SECURITY SYSTEM RACEWAY (DASHED) CONCEALED WITHIN STRUCTURAL FRAMEWORK OF WALKWAY AND DRIVEWAY CANOPIES WHEN THESE STRUCTURES ARE EXPOSED FOR REMODEL WORK. FIELD VERIFY EXACT ROUTING OF EXISTING RACEWAY AS HORIZONTAL AND LEVEL AS POSSIBLE TO MAXIMIZE AVAILABLE EXISTING LENGTH TO ALLOW FOR CAMERA CONNECTION. SECURE RACEWAY TO BUILDING STRUCTURE AT INTERVALS NO TO EXCEED THOSE PER THE N.E.C.
5. SEAL RACEWAY PENETRATION THROUGH VERTICAL FASCIA AND ROOFING SYSTEMS TO MAKE WEATHER TIGHT.
6. CONNECT TO SPARE 20 AMP, SINGLE POLE CIRCUIT BREAKER IN EXISTING PANEL '1CCC'.
7. CONNECT UNIT DISCONNECT FURNISHED INTEGRAL TO RTU–1.
8. IN SUPPLY AIR DUCTWORK ABOVE FIRST FLOOR CEILING. PROVIDE CONNECTION TO ALARM CIRCUIT OF EXISTING FIRE ALARM SYSTEM AT FIRST FLOOR LEVEL. FIELD VERIFY EXACT FLUSH MOUNTING LOCATION OF REMOTE ALARM INDICATOR IN FIRST FLOOR CEILING. PROVIDE CONNECTION TO SHUT DOWN RTU–1 UPON ACTIVATION OF DETECTOR. DUCT DETECTOR SHALL BE MANUFACTURED BY SIMPLEX TO BE COMPATIBLE WITH EXISTING SYSTEM.
9. DOWN FROM SECOND FLOOR INTO FIRST FLOOR CEILING SPACE. SEE 'PARTIAL SECOND FLOOR ELECTRICAL PLAN', SHEET E3.3, FOR CONTINUATION FROM SECOND FLOOR CEILING SPACE.
10. ROUTE NEW FEEDER ABOVE CEILING WITH MECHANICAL PIPING AS MUCH AS PRACTICAL PRIOR TO CONNECTION TO RTU–1.
11. THIS EXISTING DOOR BECOMES A TEMPORARY 'MAIN' ENTRANCE DURING REMODEL/CONSTRUCTION OF NEW MAIN ENTRANCE.
12. INSTALL EXISTING SALVAGED, SECURITY SYSTEM KEY PACS CARD READER TO OPERATE AT EXISTING DOOR LOCATION SIMILAR TO OPERATION AT PREVIOUS LOCATION. PROVIDE NEW CIRCUITING TO MATCH EXISTING, AND EXTEND AND CONNECT TO EXISTING SECURITY SYSTEM WIRING SALVAGED FROM PREVIOUS INSTALLATION. SEE ELECTRICAL DEMOLITION KEYNOTE 9 AND 12, SHEET E1.1, FOR ADDITIONAL INFORMATION.
13. PROVIDE NEW CIRCUITING TO EXTEND EXISTING 120 VOLT DOOR OPERATOR CIRCUIT (1CCB–10 OR 12, EMERGENCY POWER) RETAINED IN SPACE AND CONNECT DOOR OPERATOR AT TEMPORARY 'MAIN' ENTRANCE. SEE ELECTRICAL DEMOLITION KEYNOTE 3 AND 12, SHEET E1.1, FOR ADDITIONAL INFORMATION.
14. RELOCATE EXISTING SALVAGED, SECURITY SYSTEM KEY PACS CARD READER AND MOTION DETECTOR INDICATED FROM TEMPORARY 'MAIN' ENTRANCE DOOR LOCATION TO NEW DOOR TO OPERATE AT PERMANENT DOOR LOCATION SIMILAR TO OPERATION AT ORIGINAL (PRE–PROJECT DEMOLITION) LOCATION. PROVIDE NEW CIRCUITING TO MATCH EXISTING, AND EXTEND AND CONNECT TO EXISTING SECURITY SYSTEM WIRING SALVAGED FROM ORIGINAL INSTALLATION. SEE KEYNOTE 11, THIS SHEET, FOR TEMPORARY 'MAIN' ENTRANCE LOCATION.
15. WHEN NEW ENTRY DOOR INSTALLATION IS COMPLETE AT PERMANENT LOCATION THE EMERGENCY CIRCUIT SHALL BE REMOVED AND SALVAGED FOR CONNECTION TO NEW DOOR OPERATOR (SEE KEYNOTE 16 THIS SHEET). EXTEND NEW NORMAL POWER CIRCUIT, USING CONDUCTOR SIZE INDICATED (AS APPLICABLE), TO EXISTING PANEL INDICATED AND CONNECT 20 AMP, SINGLE POLE CIRCUIT BREAKER INSTALLED IN PANEL BY ANOTHER KEYNOTE ('1BNB', KEYNOTE 21, THIS SHEET OR 'N1C1', KEYNOTE 11, SHEET E3.2). SEE 'PARTIAL FIRST FLOOR ELECTRICAL PLAN', SHEET E3.2, FOR EXISTING PANEL 'N1C1' LOCATION. CONNECT EXISTING DOOR OPERATOR TO NEW NORMAL CIRCUIT.
16. PROVIDE NEW CIRCUITING TO EXTEND EXISTING 120 VOLT DOOR OPERATOR CIRCUIT (1CCB–10 OR 12, EMERGENCY POWER) RETAINED IN SPACE AND CONNECT PERMANENT LOCATION DOOR OPERATOR.
17. THE RETAINED, EXISTING 208 VOLT, SINGLE PHASE REVOLVING DOOR OPERATOR CIRCUIT (1CCB–14) SHALL BE MODIFIED AND REUSED TO CONNECT NEW DOOR OPERATOR. REMOVE ONE OF THE PHASE CONDUCTORS FROM THE EXISTING CIRCUIT AND REPLACE WITH A GROUNDED (NEUTRAL) CONDUCTOR AS INDICATED BY KEYNOTE 10, SHEET E3.2. PROVIDE NEW CIRCUITING TO MATCH EXISTING AND EXTEND TO CONNECT NEW DOOR OPERATOR.
18. CONNECT TO SPARE 20 AMP, SINGLE POLE CIRCUIT BREAKER IN EXISTING PANEL 'N1C1' USING CONDUCTOR SIZE INDICATED. SEE 'PARTIAL FIRST FLOOR ELECTRICAL PLAN', SHEET E3.2, FOR EXISTING PANEL LOCATION.
19. CONNECT PAGING SPEAKER TO EXISTING SPEAKER CIRCUIT IN LOBBY. FLUSH MOUNT SPEAKER WITH WHITE CIRCULAR GRILL. SPEAKER SPECIFICATIONS SHALL MATCH EXISTING PAGING SPEAKERS.
20. PROVIDE DATA CABLE PER SPECIFICATIONS TO EXISTING DATA RACK IN TELECOM ROOM 1206A. SEE 'PARTIAL FIRST FLOOR ELECTRICAL PLAN', SHEET E3.2, FOR TELECOM ROOM 1206A LOCATION.
21. PROVIDE 1–20 AMP, SINGLE POLE CIRCUIT BREAKER COMPATIBLE WITH EXISTING PANEL (WESTINGHOUSE) AND INSTALL IN AVAILABLE SPACE IN EXISTING PANEL '1BNB'. NEW CIRCUIT BREAKER AIC RATING SHALL MATCH EXISTING.
22. PROVIDE CONNECTIONS FOR RELOCATED DOOR HARDWARE TO ALL EXISTING EXTERNAL ELECTRICAL CONNECTIONS INCLUDING THOSE INDICATED BY KEYNOTE 12 AND 13 (THIS SHEET). PROVIDE NEW CIRCUITING TO MATCH EXISTING, AND EXTEND AND CONNECT EXISTING CIRCUITS.
23. PROVIDE FIRE RESISTANT SEALING MATERIAL AT CONDUIT PENETRATION THROUGH EXISTING WALL.

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot
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Revisions:	Date

VA FORM 08–6231

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Drawing Title: PARTIAL FIRST FLOOR POWER AND SPECIAL SYSTEMS PLAN

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC

Location: VAMC Omaha Nebraska

Date: MAY 10, 2013 | Checked: RJH | Drawn: DMM

Project Number: 636-13-122

Building Number: ONE

Drawing Number: E3.1

Dwg. 34 of 36

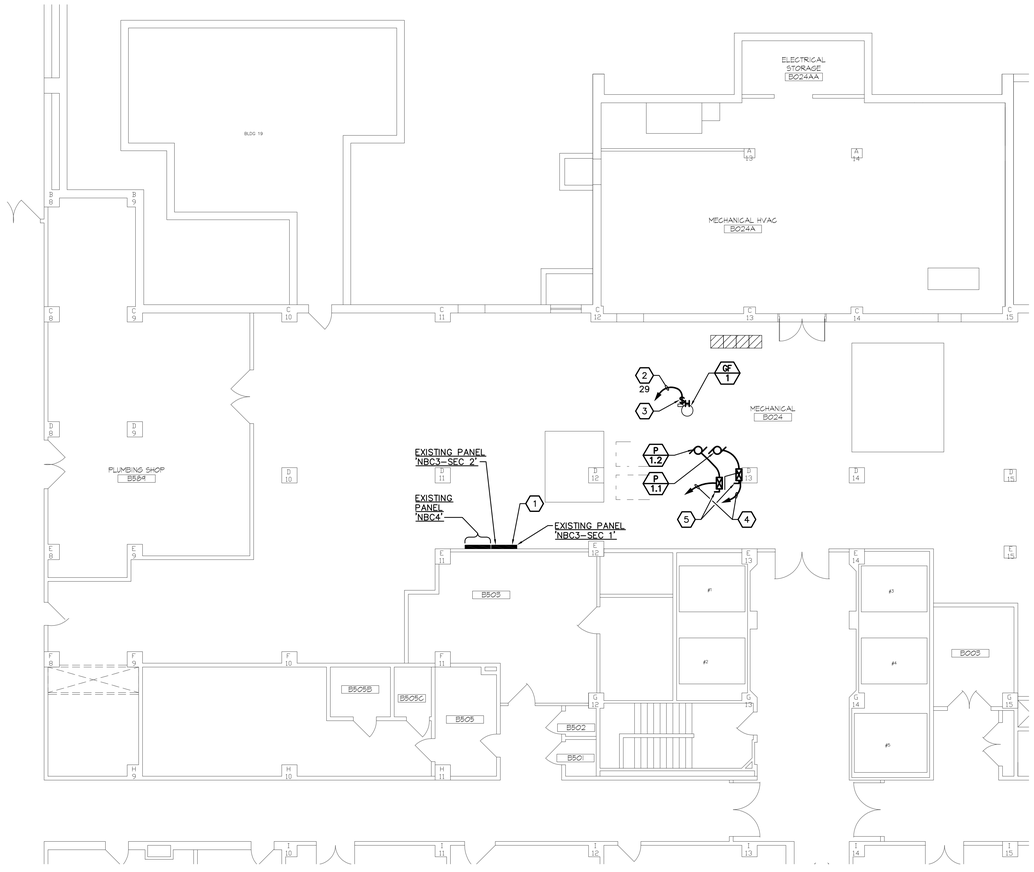
Office of Construction and Facilities Management

Department of Veterans Affairs

ELECTRICAL KEYNOTES: (⬡)

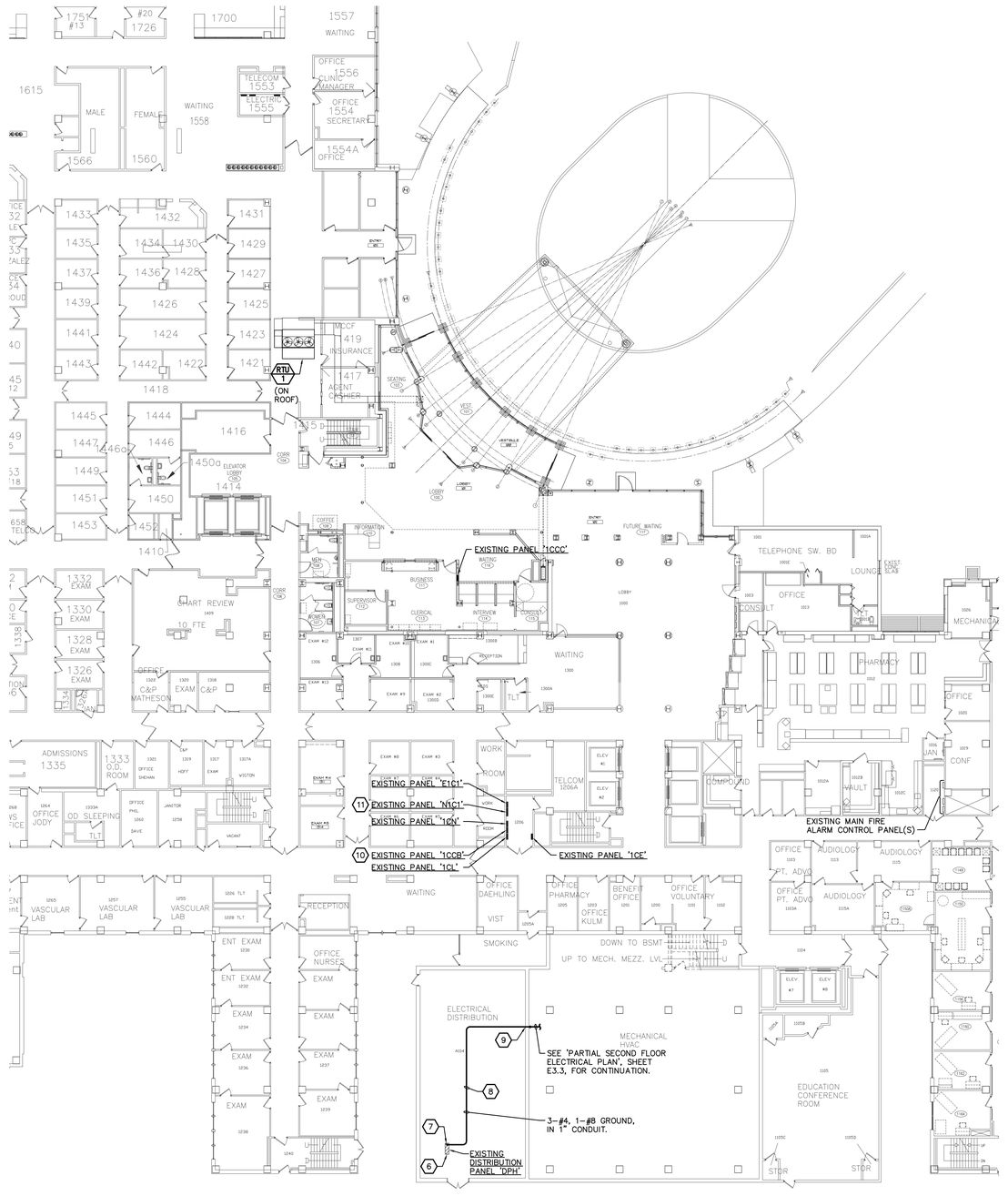
1. REMOVE TWO EXISTING 35 AMP, 3 POLE SPARE CIRCUIT BREAKERS IN EXISTING PANEL 'NBC3-SEC 1' (CIRCUIT POSITIONS 31 AND 37). RETURN BREAKERS TO OWNER. PROVIDE AND INSTALL IN MADE SPACE 2-20 AMP, 3 POLE CIRCUIT BREAKERS COMPATIBLE WITH EXISTING PANEL (GE). NEW CIRCUIT BREAKER AIC RATING SHALL MATCH EXISTING.
2. EXTEND NEW CIRCUIT TO EXISTING PANEL 'NBC3-SEC 2' AND CONNECT TO EXISTING SPARE 20 AMP, SINGLE POLE CIRCUIT BREAKER AT CIRCUIT POSITION INDICATED.
3. MOUNT SWITCH TO STRUCTURAL FRAME OF GLYCOL FEED SYSTEM EQUIPMENT. CONNECT EQUIPMENT CONTROL PANEL. PROVIDE CONNECTION FROM CONTROL PANEL TO PUMP MOTOR PER MANUFACTURERS RECOMMENDATIONS.
4. EXTEND NEW CIRCUIT TO EXISTING PANEL 'NBC3-SEC 1' AND CONNECT TO ONE OF TWO NEW 20 AMP, 3 POLE CIRCUIT BREAKERS INSTALLED AS PART OF KEYNOTE 1.
5. MOUNT COMBINATION MOTOR STARTER AND SAFETY SWITCH TO COLUMN, ONE ABOVE ANOTHER, WITH TOP OF UPPER STARTER/SWITCH NO HIGHER THAN 6'-0" ABOVE FINISHED FLOOR.
6. PROVIDE NEW 60 AMP, 3 POLE CIRCUIT BREAKER COMPATIBLE WITH EXISTING DISTRIBUTION PANEL (SIEMENS) AND INSTALL IN AVAILABLE SPACE. NEW CIRCUIT BREAKER AIC RATING SHALL MATCH EXISTING.
7. EXTEND NEW FEEDER INDICATED FROM CIRCUIT BREAKER (INSTALLED BY KEYNOTE 6) THROUGH TOP OF EXISTING 'DPH' TO STRUCTURAL CEILING OF ELECTRICAL DISTRIBUTION ROOM.
8. SUGGESTED CONDUIT ROUTING IS SHOWN. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING TO MISS EXISTING FIXED ARCHITECTURAL AND STRUCTURAL BUILDING ELEMENTS, AND MECHANICAL, PLUMBING AND/OR ELECTRICAL EQUIPMENT, DUCTWORK, PIPING AND CONDUIT. PROVIDE NECESSARY CONDUIT FITTINGS, PULL AND JUNCTION BOXES, ETC. FOR ROUTING CHOSEN.
9. PROVIDE FIRE RESISTANT SEALING MATERIAL AT CONDUIT PENETRATION THROUGH EXISTING WALL.
10. REMOVE CONNECTION TO 20 AMP, 2 POLE CIRCUIT BREAKER IN EXISTING PANEL SERVING REMOVED REVOLVING DOOR. REMOVE ONE OF THE PHASE CONDUCTORS COMPLETELY FROM PANEL TO PREVIOUS REVOLVING DOOR CONNECTION POINT. INSTALL ONE GROUNDED (NEUTRAL) CONDUCTOR TO REPLACE PHASE CONDUCTOR OF SIZE TO MATCH PHASE CONDUCTOR. PROVIDE NEW 20 AMP, SINGLE POLE CIRCUIT BREAKER COMPATIBLE WITH EXISTING PANEL (WESTINGHOUSE) AND INSTALL IN AVAILABLE SPACE. CONNECT RECONFIGURED CIRCUIT FOR NEW DOOR OPERATOR TO NEW CIRCUIT BREAKER.
11. PROVIDE 1-20 AMP, SINGLE POLE CIRCUIT BREAKER COMPATIBLE WITH EXISTING PANEL (GE) AND INSTALL IN AVAILABLE SPACE IN EXISTING PANEL 'N1C1'. NEW CIRCUIT BREAKER AIC RATING SHALL MATCH EXISTING.

SEE 'GENERAL ELECTRICAL NOTES', SHEET E0.1, FOR ADDITIONAL ELECTRICAL REQUIREMENTS



2 E3.2 PARTIAL BASEMENT ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



1 E3.2 PARTIAL FIRST FLOOR ELECTRICAL PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

Revisions:	Date

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Drawing Title: PARTIAL FIRST FLOOR PLAN AND PARTIAL BASEMENT FLOOR ELECTRICAL PLAN

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC
Location: VAMC Omaha Nebraska
Date: MAY 10, 2013 | Checked: RJH | Drawn: DMM

Project Number: 636-13-122
Building Number: ONE
Drawing Number: E3.2
Dwg. 35 of 36

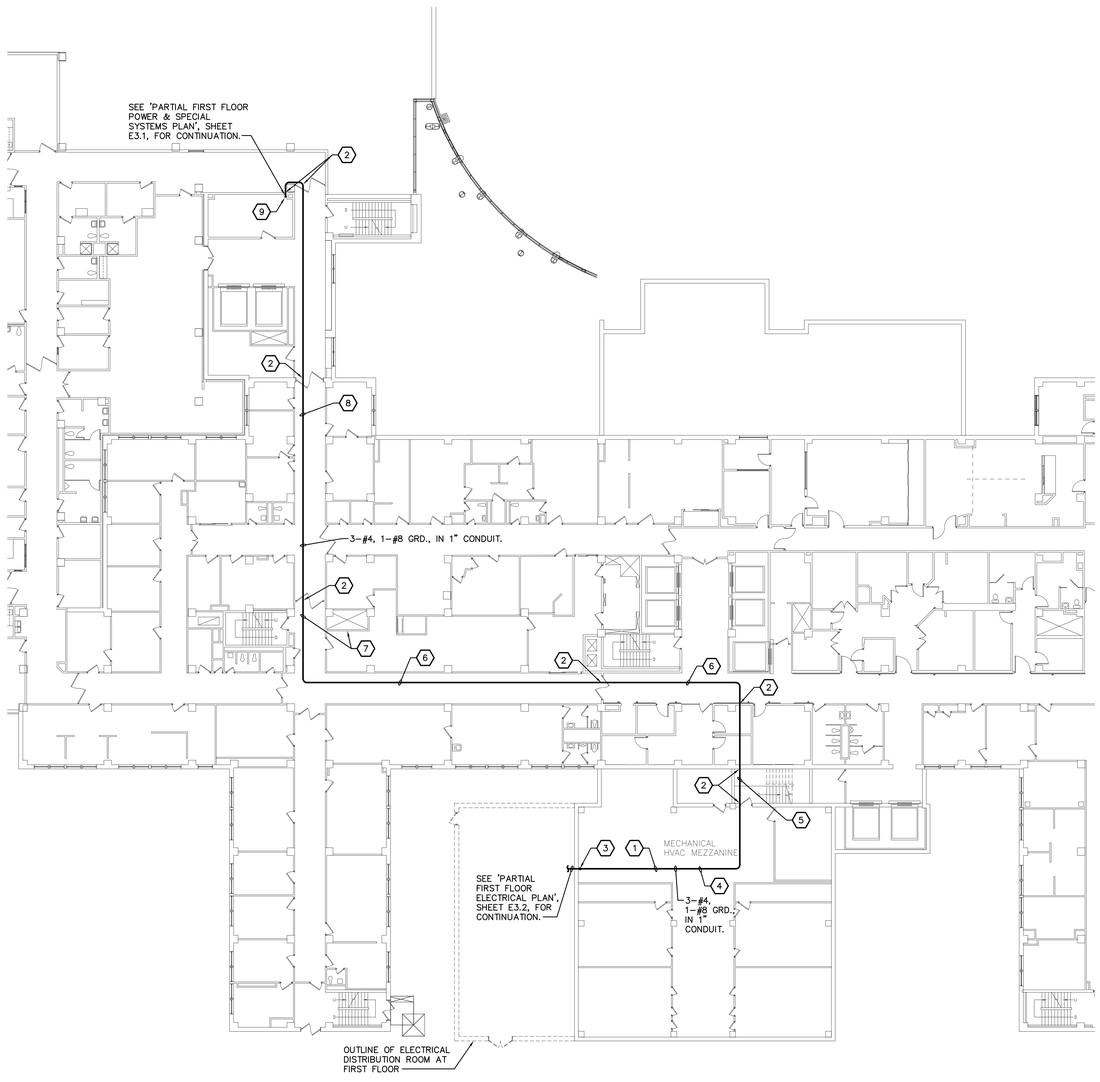
Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

ELECTRICAL KEYNOTES: (⬡)

1. SUGGESTED CONDUIT ROUTING IS SHOWN. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING TO MISS EXISTING FIXED ARCHITECTURAL AND STRUCTURAL BUILDING ELEMENTS, AND MECHANICAL, PLUMBING AND/OR ELECTRICAL EQUIPMENT, DUCTWORK, PIPING AND CONDUIT. PROVIDE NECESSARY CONDUIT FITTINGS, PULL AND JUNCTION BOXES, ETC., FOR ROUTING CHOSEN.
2. PROVIDE FIRE RESISTANT SEALING MATERIAL AT CONDUIT PENETRATION THROUGH EXISTING WALL.
3. RISE UP ON WALL TO STRUCTURAL CEILING OF MECHANICAL MEZZANINE.
4. ROUTE NEW FEEDER TIGHT TO STRUCTURAL CEILING OF MECHANICAL MEZZANINE. FASTEN SECURELY TO STRUCTURE AT INTERVALS NOT TO EXCEED THE N.E.C.
5. ROUTE NEW FEEDER TIGHT TO STRUCTURAL CEILING OF STAIRS. FASTEN SECURELY TO STRUCTURE AT INTERVALS NOT TO EXCEED THE N.E.C.
6. ROUTE NEW FEEDER ABOVE SECOND FLOOR ACOUSTICAL TILE CEILING. FASTEN SECURELY FROM STRUCTURE AT INTERVALS NOT TO EXCEED THE N.E.C. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING ABOVE CEILING.
7. AT THIS APPROXIMATE LOCATION ROUTE NEW FEEDER ABOVE CEILING WITH MECHANICAL PIPING EXITING FROM EXISTING CHASE.
8. ROUTE NEW FEEDER ABOVE SECOND FLOOR ACOUSTICAL TILE CEILING WITH MECHANICAL PIPING. FASTEN SECURELY FROM STRUCTURE AT INTERVALS NOT TO EXCEED THE N.E.C. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING ABOVE CEILING.
9. DROP NEW FEEDER DOWN WITH MECHANICAL PIPING FROM ABOVE SECOND FLOOR CEILING TO ABOVE THE CEILING SPACE OF THE FIRST FLOOR.

SEE 'GENERAL ELECTRICAL NOTES', SHEET E0.1, FOR ADDITIONAL ELECTRICAL REQUIREMENTS



1 E3.3 PARTIAL SECOND FLOOR ELECTRICAL PLAN
SCALE: 1/16" = 1'-0"

three inches = one foot 6"
one and one half inches = one foot 1 6" 0
one inch = one foot 2 6" 0
three quarters inch = one foot 2 0
one half inch = one foot 4 0
three eighths inch = one foot 4 0
one quarter inch = one foot 8 0
one eighth inch = one foot 16 0
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Revisions:	Date

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InfraStructure, LLC
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Drawing Title: PARTIAL SECOND FLOOR ELECTRICAL FLOOR PLAN

CONTRACT DOCUMENTS (CD-3) FINAL SUBMITTAL (100%)

Project Title: CORRECT MAIN ENTRANCE HVAC

Location: VAMC Omaha Nebraska

Date: MAY 10, 2013 | Checked: RJH | Drawn: DMM

Project Number: 636-13-122

Building Number: ONE

Drawing Number: E3.3

Dwg. 36 of 36

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231